

**Technical Panel
of the
Nebraska Information Technology Commission**

Tuesday, March 8, 2005 - 9:00 a.m.
Varner Hall - Board Room
3835 Holdrege St., Lincoln, Nebraska

AGENDA

Meeting Documents:

Click the links in the agenda
or [click here](#) for all documents (X.X MB - xx pages)

1. Roll Call and Meeting Notice
2. Public Comment
3. Approval of Minutes* - [February 8, 2005](#)
4. Project Reviews*
 - FY2005-2007 BIENNIAL BUDGET REQUESTS
Workers Compensation Court ([Summary Sheet](#) | [Revised Project Proposal](#))
5. Standards and Guidelines
 - Discussion: Review of Requests for Exemption
- [Commission on Public Advocacy: E-mail Standard Exemption Request](#)
6. Discussion - [Revised White Paper: "Converting distance learning networks to a high bandwidth flexible infrastructure"](#)
7. Update: [NITC Strategic Initiatives](#)
8. Discussion: [Technical Panel Charter](#) and Membership
9. Regular Informational Items and Work Group Updates (as needed)
 - Accessibility of Information Technology Work Group
 - CAP
 - Security Work Group
 - Statewide Synchronous Video Network Work Group
10. Other Business
11. Next Meeting Date

Tuesday, April 12, 2005
10. Adjourn

* Denotes Action Item

NITC and Technical Panel Websites: <http://www.nitc.state.ne.us/>

Meeting notice posted to the NITC Website: 11 FEB 2005

Meeting notice posted to the [Nebraska Public Meeting Calendar](#): 11 FEB 2005

Agenda posted to the NITC Website: 3 MAR 2005

TECHNICAL PANEL

Nebraska Information Technology Commission
Tuesday, February 8, 2005, 9:00 a.m.
Varner Hall, 3835 Holdrege
Lincoln, Nebraska
PROPOSED MINUTES

MEMBERS PRESENT:

Mike Beach, Nebraska Educational Telecommunications Commission
Brenda Decker, Chief Information Officer, State of Nebraska
Steve Henderson, Department of Administrative Services, State of Nebraska
Christy Horn, University of Nebraska, Compliance Officer
Kirk Langer, Lincoln Public Schools
Walter Weir, University of Nebraska

CALL TO ORDER, ROLL CALL, AND MEETING NOTICE

Mr. Weir called the meeting to order at 9:05 a.m. The meeting notice was posted to the Nebraska Public Meeting Calendar and the NITC web sites on January 19, 2005 and that the meeting agenda was posted to the NITC web site on February 3, 2005. All members were present at the time of roll call.

PUBLIC COMMENT

Mr. Weir announced and congratulated Brenda Decker who was appointed as the new CIO for the State of Nebraska. Steve Schafer was acknowledged as the first CIO for the State of Nebraska and was thanked for his service.

APPROVAL OF JANUARY 11, 2005 MINUTES

Mr. Henderson moved to approve the [January 11, 2005 minutes](#) as presented. Mr. Beach seconded the motion. Roll call vote: Beach-Yes, Decker-Yes, Horn-Yes, Langer-Yes, Henderson-Yes, and Weir-Yes. Results: 6-Yes and 0-No. Motion was carried.

Standards and Guidelines - Groupware Architecture: Lotus Notes Standards for State Government Agencies - Recommendation to the NITC

This agenda item was tabled.

PROJECT REVIEWS - SECRETARY OF STATE RECORDS BOARD GRANT - ONLINE PROPERTY TAX PAYMENT SYSTEM

Ms. Decker moved that the Technical Panel, having reviewed the State Records Board grant application entitled "[Online Property Tax Payment System](#)" and based on the technical information provided, finds that:

- The project is technically feasible.
- The proposed technology is appropriate for the project.
- The technical elements can be accomplished within the proposed time frame and budget.

Ms. Horn seconded the motion. Roll call vote: Weir-Yes, Henderson-Yes, Horn-Yes, Langer-Yes, Decker-Yes, and Beach-Yes. Results: 6-Yes and 0-No. The motion was carried.

PROJECT REVIEWS - SECRETARY OF STATE RECORDS BOARD GRANT - KEARNEY COUNTY ENHANCED WEB PAGE

Mr. Beach moved that the Technical Panel, having reviewed the State Records Board grant application entitled "[Kearney County Enhanced Web Page](#)" and based on the technical information provided, finds that:

- The project is technically feasible.
- The proposed technology is appropriate for the project. However, the Technical Panel recommends a closer examination of the use of existing hardware. We are concerned that as usage increases the existing systems and bandwidth might not be sufficient to keep up with demand.
- The technical elements can be accomplished within the proposed time frame and budget.

Ms. Horn seconded the motion. Roll call vote: Horn-Yes, Langer-Yes, Henderson-Yes, Weir-Yes, Beach-Yes, and Decker-Yes. Results: 6-Yes and 0-No. The motion was carried by majority vote.

PROJECT REVIEWS - SECRETARY OF STATE RECORDS BOARD GRANT - SSC ELECTRONIC FILING SYSTEM

Ms. Horn moved that the Technical Panel, having reviewed the State Records Board grant application entitled "[SSC Electronic Filing System \(South Sioux City\)](#)" and based on the technical information provided, finds that:

- **The project is technically feasible.**
- **The proposed technology is appropriate for the project. However, the Technical Panel recommends a closer examination of the use of existing hardware. We are concerned that as usage increases the existing systems and bandwidth might not be sufficient to keep up with demand.**
- **The technical elements can be accomplished within the proposed time frame and budget.**

Mr. Henderson seconded the motion. Roll call vote: Langer-Yes, Horn-Yes, Decker-Yes, Beach-Yes, Weir-Yes, and Henderson-Yes. Results: 6-Yes and 0-No. The motion was carried by majority vote.

INFORMATIONAL ITEMS

Accessibility, Christy Horn. Accessibility will be important in distance education. At the April Technical Panel meeting, Ms. Horn will provide a presentation regarding website tools to assess accessibility. Ms. Horn will check the Network Nebraska web site for accessibility.

CAP, Brenda Decker. At last month's meeting, there was a presentation from a scheduling software vendor. A contract has been signed for redundant Internet1 service – Level 3. The second access path out of Lincoln will be awarded soon. A request has been received from ESU 10 regarding costs for Network Nebraska. A meeting was held in North Platte regarding the benefits of Network Nebraska for Mid-Plains Community College. Network Nebraska is looking to expand into Tier II communities and will be looking at more expansion within next 60-90 days.

Security Work Group. No report today. Mike Carr, Security Officer, University of Nebraska, commented that an RFP has been developed to do a security audit.

Statewide Video Synchronous Work Group, Mike Beach. The Work Group has not met formally but has been involved in discussions of the white paper. Scheduling software options, tracking legislative bills and funding options are topics of focus for the work group.

WHITE PAPER DISCUSSION: "[CONVERTING DISTANCE LEARNING NETWORKS TO A HIGH BANDWIDTH FLEXIBLE INFRASTRUCTURE](#)"

Persons in attendance for the discussion (persons with * provided remarks):

Nigel Buss, North/Northeast Consortia*; Mike Carr, University of Nebraska; Mike Danahy, ESU 2*; Charles Doyle, SNDLC*; Wayne Fisher, NDE; Susan Forslund, ESU 3; Roger Hahn, Nebraska Information Network*; Gene Hand, Public Service Commission; Dennis Linster, Wayne State College*; Don Mihulka, University of Nebraska; Scott Neff, Dark Fiber Solutions*; Mike Ough, ESU 2; Bill Phillips, ESU 3; Tom Rolfes, NITC*; Shirley Schall, SWDLC*; Al Schneider, ESU 5; Jayne Scofield, DAS-DOC; Deb Swanson and Travis Wagner, Qwest Communications; Michael Winkle, NET*; Diane Wolfe, ENDLC*; and Jeff Wooters, ESU-NOC*

Mr. Beach and Mr. Rolfes provided background information and a history of the white paper's development. At a meeting held on November 5, 2004 in Kearney with consortia members, it was by consensus to put concerns and issues in a white paper. The paper is still in draft form. The white paper would be used as a communication tool to legislators and policy makers. It will be beneficial to use in conjunction with NDE's legislative bills. After today's discussions, next steps will need to be discussed and taken.

Individuals provided information on the progress, successes and shortfalls of distance education in their sector and/or area of the state. Some of the issues and areas of concern raised were:

- E-Rate - jeopardizing the benefits of e-rate filings;
- Shift of local and regional control to a state entity;
- State negotiation of costs;
- Consortium member districts will lose their control over which classes are offered and to whom;
- Diversity of the distance education enhancement task force regarding representation of K-12 districts;
- Confidentiality of transport;
- Quality of audio and video services;
- Lack of available competition for bidding process in some areas of the state;
- Bandwidth costs – paying for what is needed versus what is available;
- Scheduling priorities;
- Equipment costs and lifetime funding. It is a requirement to keep paperwork for seven years. This will increase administrative costs;

- In addition to the NITC, the Technical Panel and CAP, it was recommended to include the signatures of the stakeholders involved within the final draft of the white paper.

After discussion, it was agreed to take the following next steps:

- An E-rate task force will be organized. Mr. Fisher will take the lead.
- Individuals are to provide “specific” changes to the document to Mr. Rolfes by February 18th so that changes can be made and the document can be reviewed by CAP (Collaborative Aggregation Partnership) and the Technical Panel prior to the NITC March 15th meeting.
- Marketing efforts. Individuals in attendance were asked to communicate these efforts to their sectors.

OTHER BUSINESS

There was no other business.

NEXT MEETING DATE/TIME AND ADJOURNMENT

The next meeting of the NITC Technical Panel will be held on Tuesday, March 8, 2004, 9:00 a.m. at Varner Hall, 3835 Holdrege, in Lincoln.

With no further business, Ms. Decker moved to adjourn the meeting. Mr. Henderson seconded the motion. All were in favor. Motion was carried by unanimous voice vote.

The meeting was adjourned at 11:38 a.m.

Meeting minutes were taken by Lori Lopez Urdiales and reviewed by Rick Becker and Tom Rolfes, Office of the NITC.

Agency	Project	FY2005-06	FY2006-07
Workers' Compensation Court	Court Re-engineering - Adjudication (REVISED)		\$ 534,066

SUMMARY OF REQUEST (Executive Summary from the Proposal)

This project will procure, develop, install, and support Court Re-Engineering enhancements in the Adjudication section of the court. These enhancements will be based upon the results from current internal re-engineering analysis and the recommendations from a consultant to be engaged in Fiscal Year 2006. From the current internal analysis and court priorities, the first software products to be introduced to the court will be from one or more of the Key Technologies currently identified in the internal analysis that cannot be achieved with existing resources. This projects key technology is Computer Managed Workflow.

FUNDING SUMMARY

	FY2005-06 (Year 1)	FY2006-07 (Year 2)	FY2007-08 (Year 3)	FY2008-09 (Year 4)	Future	Total
2. Contractual Services						
2.4 Other		\$ 100,000.00				\$ 100,000.00
5. Training		\$ 36,382.50				\$ 36,382.50
6. Travel		\$ 12,127.50				\$ 12,127.50
8. Capital Expenditures						
8.1 Hardware		\$ 30,000.00			\$ 20,000.00	\$ 50,000.00
8.2 Software		\$ 355,556.25	\$ 103,607.44	\$ 108,787.81	\$ 109,790.00	\$ 677,741.50
TOTAL COSTS	\$ -	\$ 534,066.25	\$ 103,607.44	\$ 108,787.81	\$ 129,790.00	\$ 876,251.50
Cash Funds		\$ 534,066.25	\$ 103,607.44	\$ 108,787.81	\$ 129,790.00	\$ 876,251.50
TOTAL FUNDS		\$ 534,066.25	\$ 103,607.44	\$ 108,787.81	\$ 129,790.00	\$ 876,251.50

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	Mean	Maximum Possible
III: Goals, Objectives, and Projected Outcomes	14	10	13	12.3	15
IV: Project Justification / Business Case	23	20	20	21.0	25
V: Technical Impact	19	16	20	18.3	20
IV: Preliminary Plan for Implementation	9	7	8	8.0	10
VII: Risk Assessment	10	7	8	8.3	10
VIII: Financial Analysis and Budget	19	18	18	18.3	20
TOTAL				86	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
III: Goals, Objectives, and Projected Outcomes	<ul style="list-style-type: none"> - Good discussion of potential measurement/assessment methods - This proposal describes the use of workflow tools to manage and respond to events in the WCC. The proposal seeks to overlay workflow on its existing case management system. 	

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Section	Strengths	Weaknesses
IV: Project Justification / Business Case	<ul style="list-style-type: none"> - Good discussion of alternatives considered - Project justification are documented. 	<ul style="list-style-type: none"> - Provided explanation of problems with current process, not benefits of proposed process - With the exception of computer assisted decision process and event triggers, the problems listed to be addressed by workflow appear to be systems design issues. There is no discussion as to how the WCC will overlay workflow on its existing system design. A task driven system can be achieved without investment in workflow tools. This should be reflected in a ROI analysis.
V: Technical Impact	<ul style="list-style-type: none"> - Good understanding of technical strengths and weaknesses - Proposed workflow solution integrates well with existing systems. 	<ul style="list-style-type: none"> - Vision appears to include customer (attorney/claimant, etc) self service at a future point. Not sure scalability has received enough attention, if this is future expectation. - The state has selected an enterprise workflow tool that is recognized in the project proposal. Narrative appears to discount the use of that tool in the WCC architecture. This sets the stage for workflow software that operates only in the WCC architecture. A ROI analysis should clarify this business decision.
VI: Preliminary Plan for Implementation	<ul style="list-style-type: none"> - Selection process and implementation plan are well documented. 	<ul style="list-style-type: none"> - Timelines seem reasonable for a "buy", but too short if a "build" solution is chosen. Difficulty of implementing new business process ("changes in mindset") may be understated. - In an earlier review of this project, this reviewer noted that software selection took place before completing the workflow analysis. This proposal is now in keeping with that observation.
VII: Risk Assessment	<ul style="list-style-type: none"> - The impact of the introduction of workflow management is well documented, with appropriate planning to minimize risk. 	<ul style="list-style-type: none"> - Technical risks and business process acceptance risks may be understated - This project describes the acquisition and assimilation of workflow software within the computing environment of the WCC. Without a thorough understanding of other initiatives, it is difficult to assess how this technology will mesh with other technologies of the WCC. The answer appears to be one of the outcomes of the engagement of the consulting engineer. The document mentions the evaluation of an in-house solution using existing software and workflow feature inherent in Oracle. This evaluation should be completed before purchasing additional software.
VIII: Financial Analysis and Budget	<ul style="list-style-type: none"> - Dollar estimates seem low to me but the budget appears to be well documented. - Current and future hardware and software costs are identified in the proposal. 	<ul style="list-style-type: none"> - Budget appears to assume purchase of COTS system...if a build decision is made costs will likely be higher - Cost model does address ROI. Software maintenance at 30% of initial purchase seems high, but the figure must be trusted.

Nebraska Information Technology Commission

Project Proposal Form

**New or Additional State Funding Requests
for Information Technology Projects**

FY2005-07 Biennium

Project Title	Court Re-engineering – Adjudication – Revised
Agency/Entity	Nebraska Workers' Compensation Court

**Project Proposal Form
FY2005-07 Biennium**

About this form...

The Nebraska Information Technology Commission (“NITC”) is required by statute to “make recommendations on technology investments to the Governor and the Legislature, including a prioritized list of projects, reviewed by the technical panel, for which new or additional funding is requested.” In order to perform this review, the NITC and DAS-Budget Division require agencies/entities to complete this form when requesting new or additional funding for technology projects. For more information, see the document entitled “Guidance on Information Technology Related Budget Requests” available at <http://www.nitc.state.ne.us/forms/>.

Electronic versions of this form are available at <http://www.nitc.state.ne.us/forms/>.

For questions or comments about this form, contact the Office of the CIO/NITC at:

Mail: Office of the CIO/NITC
521 S 14th Street, Suite 200
Lincoln, NE 68508
Phone: (402) 471-3560
Fax: (402) 471-4608
E-mail: info@cio.state.ne.us

Submission of Form

Completed forms must be submitted by the same date biennial budget requests are required to be submitted to the DAS Budget Division. Completed project proposal forms must be submitted via e-mail to info@cio.state.ne.us. The project proposal form should be submitted as an attachment in one of these formats: Microsoft Word; WordPerfect; Adobe PDF; or Rich Text Format. Receipt of the form by the Office of the CIO will be confirmed by e-mail. If an agency is unable to submit the application as described, contact the Office of the CIO prior to the deadline, to make other arrangements for submitting a project proposal form.

Section I: General Information

Project Title	Court Re-engineering – Adjudication
Agency (or entity)	Nebraska Workers' Compensation Court

Contact Information for this Project:

Name	Randall Ceclre
Address	1221 N Street, Ste 402, PO Box 98908
City, State, Zip	Lincoln, NE 68508-8908
Telephone	402-471-2976
E-mail Address	IT.Manager@wcc.state.ne.us

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Section II: Executive Summary

Provide a one or two paragraph summary of the proposed project. This summary will be used in other externally distributed documents and should therefore clearly and succinctly describe the project and the information technology required.

This project will procure, develop, install, and support Court Re-Engineering enhancements in the Adjudication section of the court. These enhancements will be based upon the results from current internal re-engineering analysis and the recommendations from a consultant to be engaged in Fiscal Year 2006. From the current internal analysis and court priorities, the first software products to be introduced to the court will be from one or more of the Key Technologies currently identified in the internal analysis that cannot be achieved with existing resources. This projects key technology is Computer Managed Workflow.

Section III: Goals, Objectives, and Projected Outcomes (15 Points)

1. Describe the project, including:
 - Specific goals and objectives;
 - Expected beneficiaries of the project; and
 - Expected outcomes.

Goals, Objectives, Outcomes

The court has several internal re-engineering projects in various stages of development. Each project has identified key technology(s) that are critical to the project that will later have broader use in other sections of the court. This project's key technology is:

Computer Managed Workflow.

A computer managed workflow will result in an optimized flow of activities within the Clerks Office, Judicial Support, and Judges sections of the court. Inputs and outputs will be streamlined to provide just-in-time information and work events. Workflows will be managed graphically which will allow for self-documentation of processes, modeling and testing of changes to procedures, and immediate implementation. A Rules Engine will control the execution of routing logic of work and event notifications. Work activities will be automated to the extent that is appropriate. Each Judge or court staff person will have individualized work queues that will reflect pending actions that are associated with the "days" work. Court management will be able to see the status of an individual docket with overdue activities. Case-load management will be enhanced through the collection and analysis of historical activities.

Beneficiaries will include court staff and judges and all external stakeholders of the court, including attorneys, insurance companies, injured employees, and employers.

As caseload grows, the court expects to handle the increased load with minimal staff additions. Activity notices will be immediate to the next processing step. Overdue activities will create alerts to staff, management, and judges. Depending upon pre-set criteria, certain dockets will be able to flow through different paths and to different court members.

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2. Describe the measurement and assessment methods that will verify that the project outcomes have been achieved.

Times between, time to process, number of steps and repeated steps will be used to measure efficiency. Real-time assignment workload levels will assist in routing and re-routing work. Easy of understanding the workflows will determine whether the workflows are self-documenting. Event notifications will be immediate and work queues should only reflect the "days" work. Correctly routed work and notifications will determine whether the Rules Engine is functioning properly.

3. Describe the project's relationship to your agency comprehensive information technology plan.

This project was discussed in Section 4.A. Strategies and Future Direction as prepared by the court's Presiding Judge and listed in 4.C. Future IT Projects.

Section IV: Project Justification / Business Case (25 Points)

4. Provide the project justification in terms of tangible benefits (i.e. economic return on investment) and/or intangible benefits (e.g. additional services for customers).

The Adjudication re-engineering analysis identified the following problems:

The current system requires multiple screens to assign a new case. Screens are not designed to facilitate the task. The system is not task flow driven. The current screen design was built around the structure of data and not around the task which has an impact on productivity.

The current task management review is not searchable by date. There is no ability to search for all tasks by employee, by day to manage the system at a macro level. Reporting system is not flexible.

All current decision-making is manual. The current computer system does not have intelligent rules and queries to assist with the decision making process.

The current system does not have active triggers to notify change of status. Various sections of the court must run daily reports to be aware of docket status change. There is not an electronic calendar for notification of events.

The current system doesn't allow an individual judge to analyze his/her case load.

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5. Describe other solutions that were evaluated, including their strengths and weaknesses, and why they were rejected. Explain the implications of doing nothing and why this option is not acceptable.

Over the last three years, this court invested substantial time and effort to analyze and strategize moving towards a “paperless” court. This work included an extensive analysis of the possibility of collaboration with the Nebraska Supreme Court and Information Management Services (IMServices) in its efforts to increase ability to electronically file and store documents and information on a statewide basis. That effort at collaboration showed that extensive collaboration was not possible because of extensive differences in the specific missions of the Nebraska Workers’ Compensation Court and all other courts of the state of Nebraska. Some of the differences in mission relate to significant agency type functions of the court arising from statutory obligations in the Nebraska Workers’ Compensation Act. These functions relate to coverage and claims enforcement, re-education and retraining oversight, dissemination of information, and the process used to review and approve or disapprove applications for lump sum settlements. Another key difference is that the court’s statewide jurisdiction requires statewide judicial mobility, which significantly complicates scheduling and information dissemination on a case-by-case basis.

Based upon the analysis by the court, computer managed workflow is the appropriate strategic solution. Workflow software is fairly mature. Further analysis planned for in the next biennium by an outside consultant, Requests for Information, and Requests for Proposal will determine whether existing off-the-shelf software can be effectively integrated with the current court computer systems and will meet the courts requirements. Off-the-shelf software will require that the court conform to procedural and technical constraints of each unique system. Additional application server hardware will be required.

The court in December 2004 became aware of recently improved features in the Oracle Database and Application Server. As part of the solution selection process which will look at off-the-shelf solutions, the court will also evaluate these improved Oracle features in combination with its existing programming software to determine whether the problems can be solved in an acceptable manner and requirements can be met. Given that the courts current business software systems are almost 100% “in-house” developed, this solution would provide the possible benefit of tighter integration with existing systems at potentially lower development/purchase and on-going costs. There is the possibility that certain requirements may not be immediately met because of the need for custom development.

The court will evaluate what is available at the state’s enterprise level through services provided by IMServices.

Doing nothing leaves the current problems unsolved. It also does not position the court to handle increased workload without the adding of additional staff.

6. If the project is the result of a state or federal mandate, please specify the mandate being addressed.

Not applicable.

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Section V: Technical Impact (20 Points)

7. Describe how the project enhances, changes or replaces present technology systems, or implements a new technology system. Describe the technical elements of the project, including hardware, software, and communications requirements. Describe the strengths and weaknesses of the proposed solution.

The key technologies are all enhancements to our current Microsoft Windows Application and Oracle Relational Database environment. Because the court's offices in Lincoln are on 100 megabit data communications, band-width is not an issue.

Computer Managed Workflow will require the installation of new software technology on an application server. Because of the structure of the court, the court's three-tier Microsoft Windows Client – Application Server – Database Server model is still the appropriate underlining technology on which to incorporate. The courts current production environment is the Microsoft Windows Win32 construct. The solution must provide the ability for the court to continue to function in that environment. Looking to future expansion to workflows outside the court (attorneys, insurance companies, etc.) the solution must also allow for the movement to a Microsoft .NET environment and their future "Smart Client" technology. Web Services and Service Oriented Architecture (SOA) must also be supported or planned for to integrate effectively and efficiently with our current technology. The solution must also be compatible with the state's Enterprise directory system. The court has developed its own case management system on Win32 and Oracle and is integrating document management directly into that system. The workflow solution must be able to access data stored in Oracle and execute programs developed for the Win32 platform. The solution must also allow for access to the "user work queues" from "in-house" developed business software programs.

The strength of the current Microsoft Win32 solution provides the court a feature rich, robust application. Microsoft .NET / Smart Client, Web Services, and SOA will allow the court to extend from Win32 to an Internet-based application for those situations were appropriate. At the same time it adds new function points that could fail and make trouble-shooting more complicated. Interfacing with a non-homogenous system based upon a JAVA-based third-party system with the rest of the court systems could prove challenging, but may be addressed through Web Services.

The courts re-engineering analysis has laid out a roadmap for the court to be paperless by 2011. In order for there to be usable data for the court, as many digital documents as possible must be "intelligent"; that is they must have structured content embedded within them that can be program extractable (e.g. XML). Scanning and optical character recognition does not provide sufficient usable data/information and is not the solution. The court is therefore planning on implementing e-filing systems in future projects. Case-management, document management, and workflow management are underlining technologies that must be in place for e-filing to be successful. Workflow is a potential infrastructure platform for e-filing upon which a custom e-filing system could be developed. When the court reaches the point in its strategic roadmap where end user e-filing becomes a project, it will evaluate software functionality available within the court, the State, and third-party companies.

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8. Address the following issues with respect to the proposed technology:
- Describe the reliability, security and scalability (future needs for growth or adaptation) of the technology.

Computer Managed Workflow must prove to be highly reliable or it will have an adverse effect on productivity. In evaluating and choosing a solution the court will insure that production tools are available to verify that all nodes are functioning, that the solution is able to integrate with the state's Enterprise Directory for identity management, that the solution includes secured work queues for staff to control their assignments, and that the solution is scalable to allow for future implementation in a secured internet environment that would allow for use by attorneys and other external parties.

- Address conformity with applicable NITC technical standards and guidelines (available at <http://www.nitc.state.ne.us/standards/>) and generally accepted industry standards.

The court participated in a joint project with IMServices to define accessibility development standards for Microsoft Windows development. Those same standards with other published standards will be used when procuring third-party software solutions. Other standards and guidelines will be reviewed at appropriate times during the projects.

- Address the compatibility with existing institutional and/or statewide infrastructure.

IMServices and Department of Communications will be brought in to review any new technologies for compatibility.

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Section VI: Preliminary Plan for Implementation (10 Points)

9. Describe the preliminary plans for implementing the project. Identify project sponsor(s) and examine stakeholder acceptance. Describe the project team, including their roles, responsibilities, and experience.

All project plans below are tentative and may be revised based upon the recommendations and outcome of a consultant who will be brought in during Fiscal Year 2006 to review current analysis and strategic plans. The consultant will assist the court in deeper business process analysis and preliminary evaluation of alternative technical implementations such as Web Services (WS), Service Oriented Architecture (SOA), Business Process Management (BPM), and Business Process Execution Language (BPEL). A solution will be chosen using standard State Request for Proposal procedures and Proof-of-Concept testing of both third-party software and in-house solutions. The goal is to have selected/procured a solution in Fiscal Year 2006.

Fiscal Year 2007 is tentatively targeted for installation, training, and design and testing of the pilot re-engineered workflow. During the design and testing of the pilot workflow the court will gain critical knowledge necessary to plan for integration with existing systems and custom development. During Fiscal Year 2008 and beyond, fully functional workflows will be designed, developed, tested, and implemented into production. At this point it is not known how long the production roll-out will take.

Internal Court stakeholders have participated in the initial analysis or have been closely informed of the strategy. External stakeholders have not yet been approached, but current plans include having focus group sessions with key external stakeholders during Fiscal Years 2005 and 2006.

The project sponsor is the Courts Presiding Judge. He has actively and directly participated in the analysis phase of the re-engineering. The Information Technology project leader/primary developer has not yet been chosen, but will be one of the Court's Senior or Lead Application Developers. The design team will be comprised of the Presiding Judge, Clerk of the Court, Judicial Support Manager, selected staff from the Clerk of the Court's Office, Judicial Support, Legal and Coverage and Claims sections. The Information Technology Manager / Database Administrator will function as data analyst and will participate heavily in system engineering. Contract programming resources will be used if appropriate and funds are available. Policy issues that need to be addressed will be taken to the Presiding Judge and Court Administrator.

**Project Proposal Form
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The below table represents the existing internal experience upon which the courts project team will be based.

Experience

Title	Total	In Current Position
Lead Application Developer (IT Project Leader)	15+	2
Presiding Judge	BS in Agricultural Economics, MS Economics Juris Doctorate Private Business Owner - 10 County Commissioner - 4 Private attorney - 12 WCC Judge - 8	4
Clerk of the Court	40+	20
Judicial Support Manager	15	3
Clerk of the Court and Judicial Support Staff	10+	5+
Legal Staff	5+	5+
Coverage and Claims Staff	6+	6
IT Manager/DBA	28	9

10. List the major milestones and/or deliverables and provide a timeline for completing each.

- Fiscal Year 2006 – Consultant Engagement and Procurement process completed.
- Fiscal Year 2007 – Installation, training, and design and testing of the pilot re-engineered workflow.
- Fiscal Year 2008 and beyond - Fully functional workflows designed, developed, tested, and implemented into production.

11. Describe the training and staff development requirements.

For all the key technologies, not only will there be major training requirements, but changes in mindset on how to perform the duties. Workflow will require staff training in the use of graphic flowchart / diagramming tools to build the workflows. Staff training will also be required on how to use the new software. IT Staff will need to be trained on implementation, maintenance, and administration.

12. Describe the ongoing support requirements.

A Workflow system will require annual software support and upgrade fees, planning for hardware updates, etc. Purchased software will need to under upgrade/maintenance agreements.

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Section VII: Risk Assessment (10 Points)

13. Describe possible barriers and risks related to the project and the relative importance of each.

14. Identify strategies which have been developed to minimize risks.

(Combined Answer)

- Acceptance of the change by court personnel brought about by automating workflows.
 - Managers are involved in projects.
 - Staff is involved in design and selection processes.
 - Implemented software is friendly to work with.
- Solutions may have an unintended adverse impact on other areas of adjudication.
 - All impacted areas and sections are involved in impact analysis.
- Implementation of workflow could cause the loss of knowledge of how the court systems functions at the over-all level.
 - Periodic reviews of workflows need to be performed with staff to retain an understanding of the full process flow.
 - Workflow diagrams and rules definitions must be easily understood.
- A workflow system may have slow system performance.
 - The criteria for product select needs to state performance requirements.
 - Proof of concept testing will be required before a final product decision is made.
 - Response times must be monitored and appropriate corrective action taken.
- Software maintenance costs will escalate in future years.
 - Maximum maintenance cost increases are negotiated as part of any contracts.
 - Initial costs estimates were budgeted higher than usual.
- Consultant engagement will not produce any conclusive results.
 - The court has been attending AIIM, ARMA, E-Court, Oracle, Microsoft, and Borland conferences during the past six years and is gaining knowledge that will assist in the selection of a consultant and participation in the process.
 - Other outside agencies (such as IMServices) will be asked to participate where appropriate and neutrality can be achieved.
- The selected solution could not meet requirements once placed in production.
 - The court has participated in several Requests for Proposal (RFP's) with IMServices and other agencies over that last several years and has learned from these experiences.
 - The selection process will include a Proof-Of-Concept phase that will provide hands-on testing of a preliminarily selected solution based upon a actual workflow. The court completed a full process Adjudication Process analysis several years ago and has documented process flows available to choose from for the Proof-Of-Concept.
 - The court will evaluate an in-house solution based upon its existing software development platform of Borland Delphi Programming Software and Oracle Database/Application Server software. Both support Microsoft .NET, Web

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FY2005-07 Biennium**

Services, etc. Oracle also provides workflow features in its database and application server that will be evaluated.

Section VIII: Financial Analysis and Budget (20 Points)

15. Financial Information

Financial and budget information can be provided in either of the following ways:

- (1) If the information is available in some other format, either cut and paste the information into this document or transmit the information with this form; or
- (2) Provide the information by completing the spreadsheet provided below.

Instructions: Double click on the Microsoft Excel icon below. An imbedded Excel spreadsheet will be launched. Input the appropriate financial information. Close the spreadsheet. The information you entered will automatically be saved with this document. If you want to review or revise the financial information, repeat the process just described.



Excel Spreadsheet
(Double-click)

Financial information appears at the end of the document.

16. Provide a detailed description of the budget items listed above. Include:

- An itemized list of hardware and software.
- If new FTE positions are included in the request, please provide a breakdown by position, including separate totals for salary and fringe benefits.
- Provide any on-going operation and replacement costs not included above, including funding source if known.
- Provide a breakdown of all non-state funding sources and funds provided per source.

See side notes on spreadsheet above for line-item explanations.

- Hardware estimates are based upon recent purchases.
- The software and professional services estimates were based upon Requests For Information (RFI) sent to three leading vendors whom provide workflow products. These vendors ranged in the medium to high-end category of product offerings. The following preliminary criterion was provided to the vendors to respond.
 - 50 User production license
 - 10 User development license
 - Server software hosted on a 2-CPU Intel / Windows Server platform
 - Client/Server or .NET based product.
 - Need Installation Costs, Administration Training Costs, Startup Training Costs for In-house 10 Users
 - Professional Services costs for installation and customization.
 - Additional Costs not included in software license (such as database license, etc.)

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- The three product responses to the RFI are all agnostic, off-the-shelf offerings that can be integrated with the courts current systems. A Process Flow Diagrammer and Rules Engine are key functional features of all agnostic, off-the-shelf offerings. The court does not want to develop this functionality and does not plan on developing in-house a full-blown workflow management system.
- Court Information Technology staff all have experience in project management in various size projects. Project management and System Development Life Cycle (SDLC) are management tools of all court technology projects.
- Software maintenance costs were estimated higher than standard to cover unknown contingencies.
- Requests for Information were sent to two consultants with experience in workflow management. Based upon preliminary proposals the consultant engagement cost is estimated to be \$50,000. The engagement will be funded out of reallocated continuation dollars and were not included in the Budget spreadsheet.

17. Please indicate where the funding requested for this project can be found in the agency budget request, including program numbers.

Program Number 530.

Nebraska Information Technology Commission
Project Proposal Form
Section VIII: Financial Analysis and Budget

(Revise dates as necessary for your request.)

	Estimated Prior Expended	Request for FY2005-06 (Year 1)	Request for FY2006-07 (Year 2)	Request for FY2007-08 (Year 3)	Request for FY2008-09 (Year 4)	Future	Total	
1. Personnel Costs							\$ -	
2. Contractual Services								
2.1 Design							\$ -	
2.2 Programming							\$ -	
2.3 Project Management							\$ -	
2.4 Other			\$ 100,000.00				\$ 100,000.00	2.4 Other
								Professional Contract Services to assist in the installation, configuration, etc. of purchased software
3. Supplies and Materials							\$ -	
4. Telecommunications							\$ -	
5. Training			\$ 36,382.50				\$ 36,382.50	
6. Travel			\$ 12,127.50				\$ 12,127.50	
7. Other Operating Costs							\$ -	
8. Capital Expenditures								
8.1 Hardware			\$ 30,000.00			\$ 20,000.00	\$ 50,000.00	8.1 Hardware
								Year 2 is the initial hardware purchase, Future represents hardware replacement costs.
8.2 Software			\$ 355,556.25	\$ 103,607.44	\$ 108,787.81	\$ 109,790.00	\$ 677,741.50	8.2 Software
8.3 Network							\$ -	
8.4 Other							\$ -	
								Year 2 is the initial software purchase. Subsequent years represent the annual maintenance agreement costs.
TOTAL COSTS	\$ -	\$ -	\$ 534,066.25	\$ 103,607.44	\$ 108,787.81	\$ 129,790.00	\$ 876,251.50	
General Funds							\$ -	
Cash Funds			\$ 534,066.25	\$ 103,607.44	\$ 108,787.81	\$ 129,790.00	\$ 876,251.50	
Federal Funds							\$ -	
Revolving Funds							\$ -	
Other Funds							\$ -	
TOTAL FUNDS	\$ -	\$ -	\$ 534,066.25	\$ 103,607.44	\$ 108,787.81	\$ 129,790.00	\$ 876,251.50	

Rick Becker

From: Jim Mowbray [jmowbray@ncpa.state.ne.us]
Sent: Tuesday, February 08, 2005 11:20 AM
To: info@cio.state.ne.us
Cc: ron.ritchey@hss.ne.gov
Subject: Request for exemption
Follow Up Flag: Follow up
Due By: Tuesday, March 01, 2005 05:00 PM
Flag Status: Flagged

To Whom It May Concern:

Pursuant to Email Standards 4.2 we are requesting an exemption. The reason for the exemption is unique and specific to this agency.

The Nebraska Commission on Public Advocacy is not a typical state agency in terms of our documents being a part of the public domain. We represent individual clients who are charged with criminal offenses. Our staff consists of six attorneys, two support staff and one investigator. The attorneys and staff are regulated by the Code of Professional Responsibility which mandates that all attorney/client communications are strictly confidential. Those communications include any written correspondence either by word documents or email communications. No one from outside this office can view or have access to those confidential communications in any form or manner. If these attorney/client communications were to be disclosed the attorney's in this agency would be subject to discipline and could lose their license to practice law.

If our email is stored on the state's servers then access is possible by someone other than the staff of this agency, which would violate Canon 4 of the Code of Professional Responsibility. It is no different than when we store our closed files off site, we must insure that no one has access to these files. I realize that other agencies have attorneys working for them, and they use the state system, but that is different from this office, because they do not have an individual client, they represent the State of Nebraska, not a private client. In other words, to the best of my knowledge, we are the only agency that has attorneys' who represent individual private clients.

I contacted the Federal Public Defender for the State of Nebraska and asked him how the federal government deals with this issue. He told me that they too have an email standard similar to the State's, but what they do is put the two or three servers that handle the public defenders' offices emails on site in one of the public defender's offices. That way, the emails are not off site, and no one has access to them except the staff of the public defender system.

I realize that there may other options, that you may feel would work, however, unless the option is putting a state server in this office, the only alternative is to make our in house server our mail server.

If you should have any questions, or need to discuss this further, please contact me.

James R. Mowbray
Chief Counsel
Nebraska Commission on Public Advocacy
P.O. Box 98932
Lincoln, NE 68509
402-471-7778

DRAFT

~~**Converting distance learning networks to a high bandwidth,
flexible infrastructure**~~

**Upgrading Traditional Distance Learning Classrooms for
integration into a High Speed Flexible Data Infrastructure**

(ENDLC/ESU2)

A White Paper

**by the Staff of the Nebraska Information Technology Commission
and the Collaborative Aggregation Partnership (CAP)**

December 10, 2004

(Revised March 7, 2005)

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INTRODUCTION

This white paper has been drafted by the staff of the Nebraska Information Technology Commission and the members of the Collaborative Aggregation Partnership (CAP) in an attempt to communicate the history, challenges and ~~uncertain~~ future facing a majority of Nebraska's distance learning consortia as they approach the end of their distance learning contracts. This white paper will suggest an upgrade plan and sustainable networking topology that will rely upon cooperation among K-12 districts, ESUs, higher education partners, and selected agencies of the State of Nebraska. The goal of the project will be the establishment of a high bandwidth, wide area network that will allow for a variety of asynchronous and synchronous distance learning and other education-related applications and services for at least 270 of the 293 public high schools~~The goal of the project will be the establishment of a statewide synchronous videoconferencing network and a high bandwidth, wide area network for at least 270 of our 293 high schools~~ and their 43 ESU, informal education and higher education partners. Although this white paper primarily focuses on the interoperability needs of the high schools and colleges using JPEG and MPEG2 video compression technology, the statewide education network could eventually serve every school building, district, and college.

Key assumptions include:

- That upgrading all 180 JPEG sites to H.264 video within a finite length of time (July ~~2006~~2006-August ~~2007~~2008), regardless of their original contract termination date, would be ~~beneficial~~advantageous;
- That ~~telephone companies will agree to forgive the remaining time on existing JPEG contracts with little or no penalty, providing that~~ the capital investment for H.264 codecs and school/aggregation routing equipment comes from ~~outside state, federal, or foundation~~ funding sources and that the recurring revenue ~~stream amount~~ is roughly equivalent to the amount prior to conversion;
- That converting a commercial video data service (JPEG + T-1 data) to a high bandwidth (45Mbps or greater), flexible use network where the school or regional aggregation center would be responsible for their choice of applications and apportioned bandwidth would be ~~beneficial~~advantageous;
- That maintaining the monthly recurring costs for the schools' flexible use, high bandwidth (45Mbps or greater) network services at a cost similar to the current statewide average (\$1325/month--video + \$216/month--T1 data = \$1541/month ~~full 45Mbps~~) would be ~~beneficial~~advantageous;
- That proliferating the IP videoconferencing applications to elementary schools and middle schools, and the ability to interconnect schools with higher education, health care, Internet2 entities outside Nebraska, and other state agencies would be ~~beneficial~~advantageous;
- That preserving the existing programmatic relationships between schools already using video distance learning and to convert the infrastructure to a flexibly provisioned data network capable of serving emerging technology applications would be beneficial;

- That using Network Nebraska, the statewide multi-purpose telecommunications backbone, to the fullest extent possible; delivering Internet1, Internet2, streaming video, IP videoconferencing, and secure data transfer to participating entities and/or groups of participating entities would be beneficial;
- That the level and amount of involvement and intervention by selected state agencies and Network Nebraska to reach the solution described will largely be determined by the local school districts, educational service units ~~and~~ distance learning consortia, and Legislature, upon mutual agreement by the affected state agencies.

BACKGROUND

Beginning in 1992, groups of Nebraska high schools school districts began organizing themselves into eleven consortia for the purpose of delivering distance learning classes using interactive videoconferencing, mainly to high school classrooms. With the addition of one new consortium in 2002, 12 regional distance education consortia in Nebraska now provide video and data services to approximately 270 high schools school districts. The number of high schools school districts within each consortium ranges in number from six (6) to 72. The consortia accepted combined local funds with state and federal grant funds to establish video distance learning, with an obligation to pay recurring costs over the life of a-10-year contracts with telecommunications providers. The consortia are independent entities organized under inter-local agreements by participating school districts. Each has its own board of directors and distance learning director, acting as an executive officer. The distance learning directors' salaries are paid all, or in part, by the participating school districts or co-located Educational Service Unit.

The initial investment to build the distance education networks included about \$17.5 million of state lottery funds and federal funding. The Legislature, as recently as 2001, appropriated an additional \$3 million of state lottery funds to complete the system by adding another 44 school districts high schools. Together, the 13-12 regional consortia spend over \$3 million per year for video service contracts with providers. These costs average approximately \$1325 per high school district per month for the video service, ranging from \$900 per month to \$1800 per month.

Beginning with the fall semester of 2006 the original video service contracts for the distance learning consortia will start to expire. In By July-August 2006, the contracts of the Southwest Nebraska Distance Learning Consortium and the Niobrara Valley TelePartnership, and the Northeast Nebraska Distance Learning Consortium will end, affecting 85-55 sites. Another six seven distance learning consortia service contracts will expire through 2010, affecting 95-125 more sites. The 21 districts served with MPEG2 technology already have ATM (asynchronous transfer mode) technology. An early technical assessment is that each of these 21 schools will need one codec card to upgrade their systems to compatibility with H.263/H.264 video technology. The 111 K-12 sites that have H.263/H.264 video over 100 Mbps cable-provided circuits are already upgraded. [See Appendix #3]

Currently, the 12 consortia utilize three different video technologies and are not able to provide interconnectivity between consortia. Nine telephone company-provided, JPEG consortia

comprise 152 high schools and 28 ESU, higher education and informal education partners. All of these contracts for 45 Mbps (DS-3) circuits are due to expire between 2006 and 2010, with no replacement or upgrade funding models in place. Two telephone company-provided, MPEG2 consortia comprise 21 sites using 45 Mbps ATM infrastructure with contracts not due to expire until 2012. Each of these 21 sites will presumably need an H.264 codec card inserted into their video compression device to assure their interoperability with the other distance learning high schools. ~~One large~~ A cable company-provided consortium of 67 school districts in southeast Nebraska, 21 other cable-based schools near Kearney, and eight Lincoln Public Schools sites have already upgraded to H.263/H.264 video technology using 100Mbps or 1000Mbps full duplex circuits. Also, almost every school district with JPEG or MPEG2 video service and educational service units is-are purchasing from 1.5Mbps to 3.0Mbps of Internet access over these same circuits as-with an additional monthly charge.

The distance learning consortia offer a total of more than 600 classes per year, providing over 6,000 students and 2,300 adult learners with coursework including such subjects as foreign language, social sciences, mathematics, language arts, agriculture, and natural science. For rural Nebraska, especially, video distance learning is a key strategy for offsetting teacher shortages in certain subjects, offering advanced classes, and even providing elements of the core curriculum in order to maintain accreditation. The current distance learning systems concentrate on offering high school and college credit classes mainly to high school juniors and seniors, affecting nearly 10% of the students of this age group across the state, who opt to take video distance learning classes.

Distance learning holds even greater potential in the future with an integrated statewide system. A statewide synchronous video system would expand the opportunities for sharing classes among more schools across the State and accessing the instructional resources at a much greater number of higher education institutions. A statewide synchronous video system that is integrated with digital media and broadband-high bandwidth access to Internet1 and Internet2 would open up a wealth of educational resources across the state and from the nation and world. The flexible bandwidth of the resulting network would allow teachers to download streaming video clips to supplement daily lessons, “dial-up”access streaming video, and conduct interactive videoconferencing with experts and scientists from across the globe with minimal prior planning. ; The teachers would also be able to participate in virtual field trips to distant sites (e.g. Smithsonian Institution, Mt. St. Helen’s), gain access to web-based eLearning resources, and conduct videoconferences between groups of students from all over the United States. [See Appendix #1]

SWOC ANALYSIS

Strengths of the Existing Distance Learning Consortia Arrangement

The strengths most often associated with the existing distance learning consortia are:

- Fiber optic cable was installed from [the central telephone office telecommunications service providers](#) into a majority of the State's K-12 [high schools/school districts](#);
- Commercial video/data service contracts and interlocal agreements were pioneered;
- [Large grants/Local funds, combined with state and federal grants](#), were procured to purchase and install distance learning equipment and infrastructure;
- High-quality video distance education has been delivered to schools on a reliable basis;
- Cooperation and interdependence are highly developed among participating school districts;
- Quality teaching resources have been shared with schools that would not otherwise be able to hire highly qualified teachers.

Weaknesses of the Existing Distance Learning Consortia Arrangement

The weaknesses most often associated with the existing distance learning consortia are:

- Course exchange is localized rather than regionalized or statewide, and prospective higher ed partners have [some](#) difficulty reaching schools within their service areas;
- [The B](#)bartering or trading of classes between schools [creates inequity between larger schools \(originating more than receiving\) and smaller schools \(receiving more than originating\) fails to incentivize larger, self-sufficient, or more progressive districts to offer synchronous or asynchronous learning opportunities](#);
- Bell schedules and school calendars of schools involved in synchronous video instruction remain unsynchronized, [thereby sacrificing precious instructional minutes](#);
- [Consortia](#) [Several consortia](#) boundaries and sizes do not correspond with any other political subdivision [or management structure and fail to take advantage of economies of scale available through regionalization](#);
- [In most consortia, E](#)existing technology fails to take full advantage of the bandwidth available to schools;
- [There were hardly any plans to](#) [Most consortia did not](#) create a locally sustainable upgrade [and funding](#) plan at the outset of the original contract relationships.

Opportunities facing the Existing Distance Learning Consortia Arrangement

The opportunities most often associated with the future distance learning relationships are:

- The ability to develop [a regional education cooperatives](#) that enables learners to accomplish seamless transfer between high school and college, and enables administrators to procure all the educational opportunities needed within the cooperative;
- The ability to connect additional schools or groups of schools to Network Nebraska for intrastate and interstate connectivity as well as cost savings from lower priced Internet [and access to Internet2](#);

- The ability to provide a common central scheduling or asset management software to streamline the process for reserving and activating video classrooms;
- The ability to enter into contracts that would provide flexible use of the existing bandwidth, capable of supporting multiple streams of data services (including videoconferencing, streaming video, Internet1, Internet2 and other types of digital traffic) at the discretion of end users;
- The ability to regionalize future resource allocation, technical support, network management, and load balancing of Internet bandwidth [See Appendix #2];
- The ability to maximize the use of eLearning management software and digital media resources to augment synchronous video instruction.
- ~~The ability to negotiate early contract termination for at least four of the nine consortia (95 sites) allowing them to upgrade by 2007 to a fully interoperable video technology.~~

Challenges facing the Existing Distance Learning Consortia Arrangement

The challenges most often associated with the present distance learning consortia are:

- Current JPEG technology in nine consortia serving 180 K-12 and higher education sites operates at a very high bandwidth, is not efficient, is obsolete and will not be supported by the industry after likely suffer increased down time due to equipment failure before existing contracts expire;
- Providers have indicated that there will may be major price increases when the existing 10-year video service contracts expire in the nine JPEG consortia;
- Current network topology limits schools using JPEG or MPEG2 technology to just one class at a time, with only a very small capacity available for Internet1 and Internet2;
- The cost of uUpgrading to new technology that makes more efficient use of network bandwidth is expensive involves considerable capital investment;
- Incompatible video technologies and the lack of interconnections among distance learning consortia limit the sharing of classes to those schools within each regional consortium;
- Spreading IP videoconferencing technology to more elementary and middle schools and allowing it to proliferate within high schools will involve building LAN upgrades as well as campus infrastructure upgrades.

STATEWIDE SYNCHRONOUS VIDEO NETWORK

Current Status

The NITC has been working on the concept of a statewide synchronous video network since 1999. In fact, part of the Legislature's concern that led to formation of the NITC was the choice of incompatible technologies in some of the distance learning consortia. Originally, this was a problem of analog vs. digital technologies. Now it is a problem of incompatible JPEG, MPEG2, and H.263/H.264 video protocols. Through the efforts of the NITC and its work groups, the following steps have been taken to move Nebraska closer to the vision of a statewide system:

- NITC Video Compression Standards, February 2002 (moved Nebraska from four video standards to two);

- NITC Video Compression Standards, September 2004 (moved Nebraska from two video standards to one);
- The Statewide Synchronous Video Work Group, composed of K-12, higher education, state agencies, telehealth, and informal education, has met five times to further the goal of interoperability through implementation of the NITC video standards and discussion of related upgrade issues;
- NITC Synchronous Video Network Strategic Initiative / Strategic Plan;
- Special request to Congressman Osborne to obtain \$9.8 million for upgrade of the synchronous video network;
- Prioritization of the NDE Distance Learning: Infrastructure, Programming and Training Budget Request as one of five key I.T. projects to the Governor and Legislature;
- Facilitating the November 5, 2004, meeting with distance learning consortia directors and telecommunications vendors to discuss networking options;
- Development of this white paper to help describe the technology, implementation, and management of a high bandwidth, wide area network that will allow for a variety of asynchronous and synchronous distance learning applications and services to be delivered to numerous education entities; and
- Numerous meetings and briefings with involved entities to describe the elements of the project.

In addition, the Nebraska Department of Education has submitted a biennial budget request for \$10 million per year to support a statewide synchronous video network and related activities. Currently (2-23-05), LB 689, sponsored by Senator Stuhr, with Education Committee Amendment 403 is on General File and due to be discussed on the floor of the Legislature. This bill:

- Creates the Distance Education Enhancement Task Force and names membership by 6/15/05:
 - Chair of the Education Committee (chair of the Task Force)
 - Chair of the Transportation and Telecommunications Committee
 - Chair of the Appropriations Committee
 - Two representatives from Educational Service Units
 - Two representatives from distance education consortia
 - One principal or superintendent
 - One representative from the Nebraska Department of Education (infrastructure)
 - One representative from the Nebraska Public Service Commission
 - One representative from the Nebraska Information Technology Commission
 - One representative from the Nebraska Educational Telecommunications Commission
 - One representative from the coordinating commission for postsecondary education
 - One representative from state colleges
 - One representative from community colleges
 - One representative from the University of Nebraska
 - One representative of the Governor
- Requires a report by the Task Force by December 31, 2005 to include recommendations to:
 - develop broadband, scalable telecommunications structure for use in distance learning classrooms
 - develop an IP-based network to connect all existing and future distance learning and videoconferencing facilities

- [upgrade telecommunications equipment](#)
 - [provide training and support programs for educators in the development and use of distance learning](#)
 - [transfer of distance education coordination responsibilities from distance education consortia to ESUs](#)
 - [provide for statewide coordination for distance education offerings](#)
 - [identify potential funding sources](#)
 - [establish an equitable and affordable financing system for equipment and usage](#)
 - [establishes a system that allows districts to purchase distance education offerings](#)
 - [establish statewide provision of other technology-based services](#)
- [Includes an intent to fund \\$10 million in FY 06, FY 07, FY 08](#)

Future Options

Three options are being considered.

- 1) [Allow each consortium to determine its own upgrade path with no State assistance.](#) The distance learning consortia are independent entities that can renegotiate their own rates, terms and conditions. If they comply with the NITC video standards, they would be able to establish connections to Network Nebraska or other consortia in the future in order to exchange classes or other content. The downside to this option is the risk that without aggregated or volume bidding, the overall costs may be greater than through a collective bargaining process that aggregates contracts. Another risk is that consortia will respond to higher rates by reducing the amount of bandwidth, which restricts the future potential uses of their networks. Individual school districts may respond to higher rates by ~~dropping~~ [reducing total bandwidth to the next most affordable threshold \(two or three T-1 data circuits; 3-4.5 Mbps\).](#) ~~Total project~~[Full tariff networking](#) costs, including technology upgrade for synchronous video, for the affected sites in the nine JPEG consortia have been estimated by providers to be ~~\$55-46~~ million over seven years of a new contract, as compared to \$30 million over 10 years of the existing contracts. Existing sources of funding, such as federal e-rate monies and an average payment of \$1541 per month from each high school, will cover some but not all of the ~~\$55-46~~ million, leaving an estimated ~~\$23-~~\$33 million in upfront costs for equipment and networking. Individual consortia would be free to apply for competitive USDA-RUS grants to help assist with each upgrade [although each grant has a limit of \\$500,000.](#) Without any decrease in projected costs through negotiated bids or any financial support from outside sources, the estimated monthly recurring costs (before E-Rate) on the \$55 million project for each site would be \$4,020/month for 84 months. [See Network Funding Scenario #1]
- 2) [Establish a statewide contract with no State funding assistance.](#) Consortia have begun discussing having Network Nebraska (Collaborative Aggregation Partnership) act as a prime contractor to assist them in negotiating a replacement topology and achieving better cost-savings on service contracts. This would presumably help to attain lower project costs and achieve an integrated, statewide system within a much shorter time frame. It could lead to

additional connections to Network Nebraska and further aggregation of Internet purchasing. Yet, without outside funding such as a Congressional appropriation or additional lottery funds, neither the upfront nor the recurring costs would be affordable for many districts. This would further delay the infrastructure necessary to deliver the program elements of an essential Nebraska education. Besides non-participating schools, other excluded features would include scheduling software and transport costs to participate in Network Nebraska. Negotiation of a statewide contract would likely reduce the estimated network and synchronous video upgrade costs (over Option 1) to the affected schools but still could result in a recurring cost that is unaffordable to many schools. [See Network Funding Scenario #2]

- 3) Establish a statewide contract with additional funding for a statewide system. A central contract would lower costs through increased competition and access to technical expertise during contract negotiations. A central contract would provide a technical design that supports a statewide system and enables the service contracts of schools to be co-terminus for future funding upgrades and renegotiation purposes. Additional funding would help to keep overall costs affordable for all districts, create more flexibility for their existing bandwidth, and insure their participation in Network Nebraska. The estimated cost of this option is:
- \$9.3 million one-time costs to replace video codecs, add switches and routers to the school sites, and additional aggregation routers in each region;
 - an undetermined amount of upfront “buydown” costs that enable the 84-month, recurring costs to be affordable to participating schools;
 - Approximately \$1.5 million per year ongoing costs to offset the Internet transport and backbone costs so that each school will have equitable access to Internet resources;
 - Approximately \$2 million one-time costs to assist with critical Local Area Network upgrades for schools, on an as-needed basis;
 - Approximately \$1.5 million to obtain a statewide scheduling/management system for synchronous video distance learning and videoconferencing;
 - Approximately \$200,000 ongoing costs for training and support.

Option 3 contains all the advantages of Option 2 with additional upfront and ongoing support to make the network system affordable to the participating schools. [See Network Funding Scenario #3]

Recommended Approach

The third option of Establishing a statewide contract with additional funding is the only one that will insure a comprehensive, integrated, statewide system with the greatest number of schools involved.

Successful upgrade of the wide area network affecting 180 sites would ensure that technology could continue to play a major role in the delivery of educational services and content for the next seven years and beyond. As schools begin to exhaust the 45 Mbps bandwidth, new networking options could be explored and contracted at that point. Failure to upgrade would almost certainly “sentence” a great number of schools to the absolute minimum of Internet

access, without the ability to access the software and data applications needed to deliver the essential elements of a Nebraska education.

NETWORK UPGRADE PLAN

The Network Upgrade Plan includes a proposed timeline of events, a discussion of the roles of the involved entities, and a possible funding portfolio to accomplish the project.

Proposed Timeline of Events

1. December 10, 2004-~~January 31~~February 18, 2005: Input and recommended revisions to this white paper are received from the distance learning consortia, ESU-NOC committee, higher education and informal education partners, and the Statewide Synchronous Video Network Work Group as well as from the consortium boards and member schools.
2. ~~January 31~~February 18-February 4²⁵, 2005: The staff of the NITC revises the white paper.
3. ~~March 8~~, 2005: The NITC Technical Panel recommends the white paper as ~~the preferred approach~~important background information to accomplishing a wide area, high bandwidth, flexibly provisioned network capable of delivering a number of services to Nebraska education entities.
4. March 15, 2005: The NITC recommends the white paper as important background material to the Distance Education Enhancement Task Force, if created by LB 689, as the members discuss the creation of a wide area, high bandwidth, flexibly provisioned network capable of delivering a number of services to Nebraska education entities.
4. ~~5. March 15-June 3, 2005: The CAP holds pre-project meetings with the distance learning consortia directors, ESU-NOC members, and the principal telecommunications providers to review the network topologies, cost structure, lines of demarcation, and bandwidth/QoS management strategies. LB 689 is monitored as it moves through the legislative process. Named organizations will respond if asked for membership suggestions for the Distance Education Enhancement Task Force.~~

~~*****Timeline events 6-8 dependent upon passage of LB 689*****~~

6. June 15-December 31, 2005: The Distance Education Enhancement Task Force meets to formulate recommendations to upgrade and coordinate distance education.
7. December 31, 2005: The Distance Education Enhancement Task Force submits its improvement plan to upgrade and coordinate distance education in Nebraska. The report shall include recommendations for policies and potential legislation to the Clerk of the Legislature.;
5. ~~8. February-January-April, 2006: The Nebraska Department of Education communicates updates relative to its legislative biennial budget request, as well as progress on securing other alternative funding sources to supplement the project. Pending the~~

recommendations of the Distance Education Enhancement Task Force, the Legislature considers funding support for the distance education enhancement project;

*****All remaining events and the accompanying timeline are purely hypothetical and are provided in an attempt to demonstrate the feasibility of the overall project*****

~~6-9.~~ March 1 - July 30, 2005 ~~May, 2006:~~ Pending the funding and policy recommendations of the Legislature, ~~t~~The DAS-Division of Communications, in partnership with CAP, ESUs, and distance learning consortia, construct and release an RFP and bid process that provides for a master purchasing contract for wide area, high bandwidth, flexibly provisioned network circuits to all affected entities.

~~7.~~ 10. ~~August 1, 2005~~ Date Uncertain: Bids are awarded by DAS-Division of Communications for a master purchasing contract for ~~the 180~~ 45 Mbps or greater tail circuits that will be activated from ~~2006-07~~ 2006-08.

~~8.~~ 11. ~~November-December, 2005:~~ First wave of school districts ~~Schools from five consortia areas (Southwest DLC, Niobrara Valley TP, North Central DLC, Northeast Nebraska DLC, Northeast Nebraska Learners Academy~~ file e-Rate form 471s for “Internet Access Telecommunications” -from the Network Nebraska master contract, effective July 1, ~~2006~~ 2006.

~~9.~~ 12. ~~May-August, 2006:~~ Approximately 85 ~~First wave of~~ H.264 codecs, ~~85~~ building routers, and ~~two~~ aggregation routers are installed in ~~the first wave of~~ K-12 and higher education sites, with DS-3 upgrades occurring from July 1-August 15, 2006.

~~10.~~ 13. ~~July-August, 2006:~~ Twenty-one H.264 cards are installed in the Mac500 codecs of the Sandhills Technology Education Partnership schools and the Crossroads Consortium schools.

~~11.~~ 14. ~~November-December, 2006:~~ Schools from four consortia areas (Central NE DLC, Western NE DLC, Eastern NE DLC, Tri-Valley North DEC) ~~Second wave of school districts~~ file e-Rate form 471s for “Internet Access Telecommunications” from the Network Nebraska master contract, effective July 1, 2007.

~~12.~~ 15. ~~May-August, 2007:~~ Approximately 95 ~~Second wave of~~ H.264 codecs, ~~95~~ building routers, and ~~three~~ aggregation routers are installed in ~~the second wave of~~ K-12 and higher education sites, with DS-3 upgrades occurring from July 1-August 15, 2007.

~~13.~~ 16. ~~September 1, 2007:~~ Over 300 education sites are united by a high bandwidth, wide area network, capable of point-to-point and point-to-multipoint IP videoconferencing, between schools and from schools to other entities.

Roles of the Involved Entities

The **Local Education Agency (LEA)** [e.g. school, ESU, college] is the end-user of the services and bandwidth available over the network. Currently, each school, ESU, or college maintains its own technical support staff. The level of support ranges from volunteer or stipended part time staff in smaller schools to multiple full-time staff in larger schools, ESUs and college campus network operations centers. Responsibilities of the LEA under the wide area, flexibly provisioned, high bandwidth network -would include maintaining a secure Local Area Network (LAN) extending to the Ethernet port on the router, including but not limited to effective virus protection, current Operating Systems with updates on all devices, properly licensed software,

uninterruptible power supplies, and device security. The LEA ~~will-would~~ also maintain its own videoconferencing and distance learning equipment or contract for maintenance on the equipment. The LEA ~~will-would~~ also own and maintain its building router using contracted vendor maintenance. The maintenance ~~would~~ includes a current operating system, up-to-date access lists, appropriate reflective access lists, and redundancy of core devices to the extent possible. The LEAs ~~will-would~~ have representation on the Network Nebraska Advisory Group (NNAG).

The **Distance Learning Consortia (DLC)** directors ~~would be the primary interface between the network upgrade project and the end-users. currently function as schedulers, troubleshooters, eRate specialists, program developers, and the member schools' technical and contract liaisons to the telecommunication service providers. At the outset, their responsibilities would include interpreting and communicating the future capabilities and functionality of the network upgrade project, implicated costs, and applications available to the school districts and administrators. As the wide area network upgrade is phased in,~~ DLC directors would be responsible for developing training materials on the new IP video technology for school district staff and teachers. DLC directors would also help: Develop specifications and guidelines for the ~~purchase and~~ provisioning of a statewide asset management system for monitoring of videoconferencing facilities; develop specifications and guidelines for a web-based event clearinghouse of educational programs and opportunities; and guide schools with the purchase and deployment of additional IP video devices. The DLC directors would ~~eventually evolve into~~become coordinators of digital content, operating as the programmatic representatives for area schools. The DLC directors would have representation on the Network Nebraska Advisory Group (NNAG).

The **Educational Service Unit—Regional Network Operations Centers (ESU-RNOC)**, ~~once established,~~ would be the interfaces between the high bandwidth, wide area networks ~~servicing the LEAs and the~~ Network Nebraska ~~backbone. Currently, the ESU network operations staff individually assist with such services as e-mail, Internet filtering, network security, technical troubleshooting, and hardware and software applications. As the ESU-RNOCs are established, the regional ESUs and colleges could opt to leverage existing staff expertise and hire new expertise to manage and maintain regional services. Although there would likely be some regional aggregation of servers and routers, these devices would be able to be managed remotely.~~ The ESU-RNOCs would extend service contracts to LEAs to help manage their bandwidth and resolve issues related to Network Nebraska usage. The ESU-RNOCs would manage ~~WAN-wide area network~~ bandwidth usage/traffic within their regional aggregation. The ESU-RNOCs would manage/limit bandwidth usage/traffic when leaving the regional aggregations to traverse Network Nebraska. The ESU-RNOC ~~would reserve the right to correct any network activity which compromises or potentially compromises the regional wide area network or Network Nebraska through insecure or illegal network use as well as non-educational or inappropriate network use. would have the authority to disconnect a school that is negatively impacting the network as a result of viruses, denial of service attacks, etc.~~ The ESU-RNOCs would provide consultation and support to LEAs as mutually agreed. The ESU-RNOCs would assure compliance with all contractual terms and conditions related to access and transmission on Network Nebraska. The ESU-RNOCs would have representation on the Network Nebraska Advisory Group (NNAG).

The **University of Nebraska Computing Services Network (UNCSN)** would be the main contact between the ESU-NROCs and the service providers. The staff of the UNCSN would receive requests for service and convert them into service orders, helping to insure that the requirements of the customer are being met by the primary and secondary providers. The UNCSN would be the aggregator of Internet demand and purchaser of Internet service for the public entities who ~~are customers of~~ [opt for this service through](#) Network Nebraska. The UNCSN would also handle the routing of traffic to Internet2 among eligible entities. The UNCSN would staff the Level 2 Network Operations Center for education entities on Network Nebraska. The UNCSN would host the Network Nebraska website, www.networknebraska.net. The UNCSN would participate in the Network Nebraska Advisory Group (NNAG).

The **Department of Administrative Services—Division of Communications (DAS-DOC)** would be the main author of the Request for Proposal (RFP), with input and specifications provided by the DLCs and ESUs. The DAS-DOC would negotiate the master purchasing contract, allowing school districts [and colleges](#) or groups of school districts [and colleges](#), to purchase services from the master purchasing contract. These services would include Internet access and [/or](#) transport from the major nodes (Norfolk, Omaha, Lincoln, Grand Island, Kearney, North Platte, Scottsbluff) of the statewide network and 45Mbps [Internet access or greater transport](#) through high bandwidth, wide area networking circuits on a regional basis. The DAS-DOC would charge an administrative fee to end users or groups of end users for use of its services. This administrative fee is regulated by the Federal government and must be the same fee charged to any DAS-DOC customer; local, state, or Federal. The fee is currently 10% and cannot exceed actual costs. The DAS-DOC would participate in the Network Nebraska Advisory Group (NNAG).

Nebraska Educational Telecommunications (NET) would staff the Level 1 help desk and Network Information Center for Network Nebraska, answering the 1-888-NET-NEBR ([888-638-6327](tel:888-638-6327)) toll-free number. NET staff ~~can~~ [would](#) assist with the master purchase of the building codec, [switching](#) and router equipment as well as consulting on room integration issues. NET would be a likely provider of digital content over the terrestrial and satellite transmitter network. NET would participate in the Network Nebraska Advisory Group (NNAG).

The **Nebraska Information Technology Commission (NITC)** would act as a facilitator of the process, providing staff assistance as needed to arrange and hold meetings, build consensus, draft documents, communicate with involved entities, and provide briefings to potential users, stakeholders, providers, and policy makers. The Legislature created the NITC to guide the State's investments in information technology. The NITC Technical Panel has recommended video compression protocol standards to accomplish a statewide synchronous videoconferencing network and can respond to subsequent requests for other networking standards. The NITC would provide staff support for, and participate in, the Network Nebraska Advisory Group (NNAG).

The **Nebraska Department of Education (NDE)** would offer policy and programmatic guidance to make sure that the resulting network capacity and videoconferencing system [will](#) [would](#) be able to offer enough educational opportunities for schools to deliver the elements of an

essential Nebraska education, as described by the State Board of Education. The NDE would take the State lead on helping to secure funding to make the project feasible. NDE would offer policy and funding guidance on matters related to E-Rate eligibility. The NDE would participate in the Network Nebraska Advisory Group (NNAG).

The **Nebraska Public Service Commission** (PSC) would offer policy guidance and consultation to make sure that the services and pricing offered by the telecommunications providers comply with the PSC telecommunications rules and regulations. The role of the PSC is to make sure that every available service and pricing alternative is being considered by the industry in order to improve the project affordability for Nebraska schools. The PSC would participate in the Network Nebraska Advisory Group (NNAG).

The **Network Nebraska Advisory Group** (NNAG) would provide the conduit for LEAs, DLC directors, and ESU-NROC staff to provide input to Network Nebraska and the members of the Collaborative Aggregation Partnership. Quarterly face-to-face or videoconferencing meetings would be held to discuss upcoming events, issues, and performance of the network. Membership would be open to any end-user or customer of Network Nebraska. The NITC would charter the Network Nebraska Advisory Group with a list of responsibilities and duties.

Funding Portfolio

Providing a feasible funding portfolio is a critically important piece of this project. However, many variables cannot be defined at this juncture. The actual and eventual costs of equipment and networking cannot be known without performing a bid process. So, scenarios can only be presented at this time based upon the industry's best estimates.

Notes: Site router [and switches, H.263/H.264](#) codec and scheduling software are likely to be ineligible for E-Rate reimbursement [unless included in a service product from the telecommunications provider, and therefore must be bid separately as equipment and software, they would have to](#) be paid for at the outset of the project or amortized over the life of the contract. Higher education and informal education partners are ineligible for E-Rate and state K-12 funding, therefore their upgrade costs must be taken into consideration.

The NDE budget adjustment document outlined project estimates for the equipment, maintenance, training, and management of the system. These numbers would vary considerably by the time of implementation, depending upon amortization and negotiation of a master purchasing contract.

[Sustainability](#)

[In most cases, the previous 10-year commercial video data service contracts of the DLCs failed to build in any escrow or funding to meet the future costs associated with equipment and technology upgrades at the culmination of the contracts. The next contracts for wide area, high bandwidth services must provide for some type of mechanism for funding technology upgrades at the end of the contract period.](#)

Statewide Synchronous Video Network

Equipment Costs (as identified in the NDE Budget Adjustment request, 9-22-04)

Account Description by item	FY 06 Adj Req	FY 07 Adj Req	Est. Ongoing
School Site Router Hardware	\$ 800,000	\$ 800,000	\$ 0
School Site Router Maintenance	\$ 250,000	\$ 250,000	\$ 250,000
Aggregation Point Router Hardware	\$ 1,300,000	\$ 0	\$ 0
Aggregation Router Maintenance	\$ 200,000	\$ 200,000	\$ 200,000
School Site Codec Hardware	\$ 1,500,000	\$ 1,500,000	\$ 0
School site Codec Maintenance	\$ 200,000	\$ 200,000	\$ 200,000
Ancillary Equipment/LAN upgrades	\$ 1,200,000	\$ 1,700,000	\$ 500,000
Scheduling/Management system	\$ 745,000	\$ 725,000	\$ 350,000
Training and Support	\$ 200,000	\$ 200,000	\$ 200,000
Subtotal	\$ 6,395,000	\$ 5,575,000	\$ 1,700,000

Account Description by item	FY 06-07 Adj Req	Est. Ongoing	Responsibility
School Site Router Hardware	\$ 1,600,000	\$ 0	Outside Funds
School Site Router Maintenance	\$ 500,000	\$ 250,000	LEA
Aggregation Point Router Hardware	\$ 1,300,000	\$ 0	Outside Funds
Aggregation Router Maintenance	\$ 400,000	\$ 200,000	Network NE
School Site Codec Hardware	\$ 3,000,000	\$ 0	Outside Funds
School site Codec Maintenance	\$ 400,000	\$ 200,000	LEA
Ancillary Equipment/LAN upgrades	\$ 2,900,000	\$ 500,000	Outside Funds
Scheduling/Management system	\$ 1,470,000	\$ 350,000	Outside Funds
Training and Support	\$ 400,000	\$ 200,000	ESUs/DLC
Subtotal	\$11,970,000	\$ 1,700,000	

Account Description by Source	FY 06-07 Adj Req	Est. Ongoing
Lottery Fund	\$10,270,000	\$ 850,000
Outside Funds	\$10,270,000	\$ 850,000
Network Nebraska	\$ 400,000	\$ 200,000
Local Education Agencies	\$ 900,000	\$ 450,000 (\$228/month/site)
ESUs/DLC Directors	\$ 400,000	\$ 200,000
Subtotal	\$11,970,000	\$ 1,700,000

Statewide Synchronous Video Network

Networking Costs

<u>Account Description by Service</u>	<u>Total Contract (7 yrs)</u>
Qwest Network Price	\$ 30,634,227
NIN Network Price	\$ 15,400,000
Subtotal	\$ 46,034,227

Network Funding Scenario #1 (assuming full estimated cost of network, \$3342/month local contributions, no time value of money, with no buydown)

<u>Account Description by Source</u>	<u>7yr Contract</u>
Total Estimated Network Costs	\$ 46,034,227
Est. Local Contribution Before E-Rate (\$3342/mnth x 84 mnths x 164 sites) -	<u>\$ 46,034,227</u>
Gap in Network Funding	\$ 0

Network Funding Scenario #2 (assuming 20% discounted cost of network, \$2673/month local contributions, no time value of money, with no buydown)

<u>Account Description by Source</u>	<u>7yr Contract</u>
Total Estimated Network Costs	\$ 36,827,377
Est. Local Contribution Before E-Rate (\$2673/mnth x 84 mnths x 164 sites) -	<u>\$ 36,827,377</u>
Gap in Network Funding	\$ 0

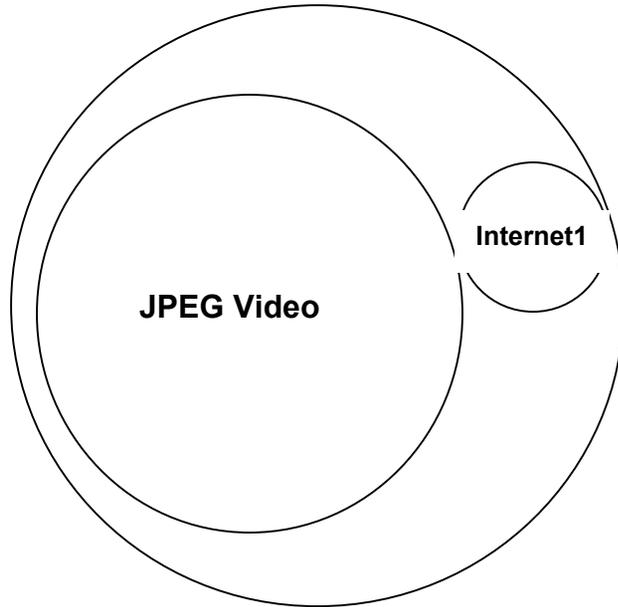
Network Funding Scenario #3 (assuming 20% discounted cost of network, \$1541/month local contributions, leveraging time value of money, with buydown)

<u>Account Description by Source</u>	<u>7yr Contract</u>
Total Estimated Network Costs	\$ 36,827,377
Est. Local Contribution Before E-Rate (\$1541/mnth x 84 mnths x 164 sites) -	<u>\$ 21,228,816</u>
Gap in Network Funding	\$ 15,598,561
Credit for Time Value of Money (9% x 7 yrs = Future Value Factor of 1.8280)-	<u>\$ 7,065,431</u>
Difference (Buydown)	\$ 8,533,130

Less 60% E-Rate Discount Upfront	\$ 5,119,877
Cash Upfront	\$ 3,413,253

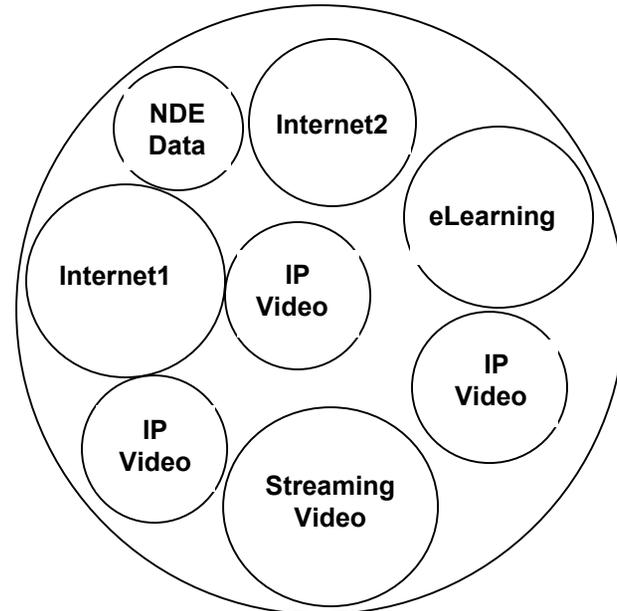
Cash Upfront Difference (Buydown) would have to come from a combination of Local, State, and Federal sources.

**45 megabit DS-3 fiber
(old JPEG and T-1 Internet)**



**\$1325/month JPEG video
\$ 216/month T-1 Internet**

**45 megabit DS-3 fiber
(new Flexible Use)**

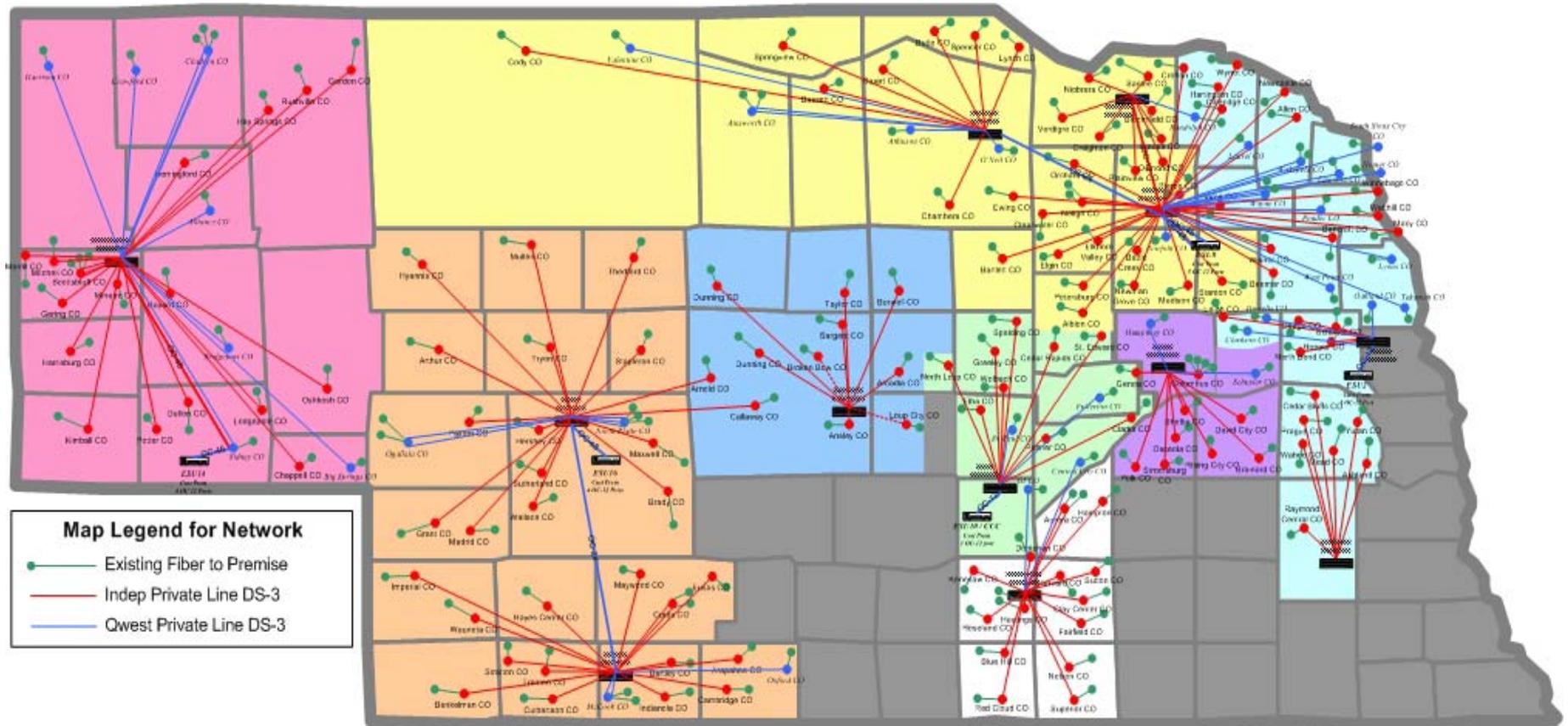


**\$1541/month full use of
fiber capacity for IP
Video, Internet1,
Internet2,
streaming video,
eLearning, NDE data**

Technology Conversion for Nebraska Education Network

[Formerly the Distance Learning Network]

Nebraska's Telephone / Telecommunications Industry



High School or Community-School/School	Bandwidth	Video Protocol	ESU Area	Dist. Learning Consortium	Contract Expires	Community College Area
Aurora	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Aurora-Edgerton Explorit Center	45 Mbps	JPEG				Central CC
Blue Hill	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Central City	45 Mbps	JPEG	7	CNDEC	2008	Central CC
Clay Center	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Doniphan-Doniphan/Trumbull	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Fairfield-South Central Unified 5	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Hampton	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Harvard	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Hastings-Adams Central	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Hastings-Central Community College	45 Mbps	JPEG				Central CC
Hastings-ESU 9	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Kenesaw	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Nelson-South Central Unified 5	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Red Cloud	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Roseland-Silver Lake	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Superior-South Central NE Unified 5	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Sutton	45 Mbps	JPEG	9	CNDEC	2008	Central CC
<i>Giltner (NO DL)</i>	1.5 Mbps		9			Central CC
<i>Hastings Senior High (NO DL)</i>	11 Mbps		9			Central CC
Brainard-East Butler	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Columbus	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Columbus-Central Community College	45 Mbps	MPEG2	7			Central CC
Columbus-ESU 7	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Columbus-Lakeview	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
David City	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Genoa-Twin River H.S.	1.5 Mbps		7			Central CC
Humphrey	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Osceola	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Polk-High Plains	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Rising City	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Schuyler Central	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Shelby	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Stromsburg-Cross County	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Allen	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Ashland-Ashland/Greenwood	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Bancroft-Bancroft/Rosalie	45 Mbps	JPEG	2	ENDLC	2009	Northeast CC
Cedar Bluffs	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Clarkson	45 Mbps	JPEG	7	ENDLC	2009	Central CC
Coleridge	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Crofton	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Dodge	45 Mbps	JPEG	2	ENDLC	2009	Metro CC
Emerson-Emerson/Hubbard	3 Mbps	H.264	1	ENDLC	2009	Northeast CC
<i>Fremont (NO DL)</i>	1.5 Mbps		2	ENDLC	2009	Metro CC
Fremont-ESU 2	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Hartington	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Homer	3 Mbps	H.264	1	ENDLC	2009	Northeast CC
Hooper-Logan View	45 Mbps	JPEG	2	ENDLC	2009	Metro CC
Howells	45 Mbps	JPEG	7	ENDLC	2009	Central CC
Laurel-Laurel/Concord	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Leigh	45 Mbps	JPEG	2	ENDLC	2009	Central CC
Lyons-Lyons/Decatur Northeast	45 Mbps	JPEG	2	ENDLC	2009	Northeast CC
Macy-Umo n ho n Nation	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Mead	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Newcastle	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
North Bend	45 Mbps	JPEG	2	ENDLC	2009	Metro CC

Oakland-Oakland/Craig	45 Mbps	JPEG	2	ENDLC	2009	Northeast CC
Omaha-Metropolitan Community College	45 Mbps	JPEG				Metro CC
Pender	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Prague	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Raymond-Raymond Central	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Scribner-Scribner/Snyder	45 Mbps	JPEG	2	ENDLC	2009	Metro CC
South Sioux City	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Tekamah-Tekamah/Herman	45 Mbps	JPEG	2	ENDLC	2009	Northeast CC
Wahoo	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Wakefield	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Wakefield-ESU 1	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Walthill	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Wayne	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
West Point	45 Mbps	JPEG	2	ENDLC	2009	Northeast CC
Winnebago	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Winside	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Wisner-Wisner/Pilger	45 Mbps	JPEG	2	ENDLC	2009	Metro CC
Wynot	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Yutan	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
<i>Ponca (NO DL)</i>	1.5 Mbps		1			Northeast CC
Lincoln-Bryan Learning Community	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-East H.S.	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-Lincoln H.S.	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-LPSDO	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-Northeast H.S.	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-North Star H.S.	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-Southeast H.S.	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-Southwest H.S.	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-Science Focus School	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Atkinson-West Holt Rural H.S.	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Bartlett-Wheeler Central	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Butte-West Boyd Unified	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Chambers	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Clearwater-NE Unified District 1	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Elgin	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Ewing	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Lynch	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Neligh-ESU 8	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
O'Neill	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Orchard-NE Unified District 1	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Petersburg-Boone Central (nonrenewal?)	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Spencer-West Boyd Unified	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Stuart	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Ainsworth	45 Mbps	JPEG	17	NCDLC	2008	Northeast CC
Ainsworth-ESU 17	45 Mbps	JPEG	17	NCDLC	2008	Northeast CC
Bassett-Rock County H.S.	45 Mbps	JPEG	17	NCDLC	2008	Northeast CC
Cody-Cody/Kilgore	45 Mbps	JPEG	17	NCDLC	2008	Mid-Plains CC
Springview-Keya Paha	45 Mbps	JPEG	17	NCDLC	2008	Northeast CC
Valentine	45 Mbps	JPEG	17	NCDLC	2008	Mid-Plains CC
Bloomfield	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC
Creighton	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC
Niobrara	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC
Osmond	45 Mbps	JPEG	8	NE.NEDLC	2007	Northeast CC
Plainview	45 Mbps	JPEG	8	NE.NEDLC	2007	Northeast CC
Randolph	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC
Santee	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC
Verdigre-NE Unified District 1	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC

Appendix 3

336 Sites affected by network upgrade

December 10, 2004

Wausa	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC
Albion-Boone Central (<i>unconsolidating?</i>)	45 Mbps	JPEG	7	NE. NELA	2007	Central CC
Battle Creek	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Madison	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Neligh-Neligh/Oakdale	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Newman Grove	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Norfolk-Northeast Community College	45 Mbps	JPEG			2007	Northeast CC
Norfolk-Northeast Community College	45 Mbps	JPEG			2007	Northeast CC
Norfolk-Northeast Community College	45 Mbps	JPEG			2007	Northeast CC
Norfolk-Northeast Nebraska Arts Council	45 Mbps	JPEG			2007	Northeast CC
Norfolk	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Pierce	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Stanton	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Tilden-Elkhorn Valley	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Wayne-Wayne State College	45 Mbps	JPEG			2007	
Wayne-Wayne State College	45 Mbps	JPEG			2007	
Ansley	45 Mbps	MPEG2	10	STEP	2012	Mid-Plains CC
Arcadia	45 Mbps	MPEG2	10	STEP	2012	Central CC
Broken Bow	45 Mbps	MPEG2	10	STEP	2012	Mid-Plains CC
Burwell	45 Mbps	MPEG2	10	STEP	2012	Northeast CC
Dunning	45 Mbps	MPEG2	10	STEP	2012	Mid-Plains CC
Loup City	45 Mbps	MPEG2	10	STEP	2012	Central CC
Merna-Anselmo/Merna	45 Mbps	MPEG2	10	STEP	2012	Mid-Plains CC
Sargent	45 Mbps	MPEG2	10	STEP	2012	Mid-Plains CC
Taylor-Loup County H.S.	45 Mbps	MPEG2	10	STEP	2012	Mid-Plains CC
Adams-Freeman H.S.	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Arlington	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Auburn-ESU 4	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Beatrice	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Beatrice-ESU 5	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Beatrice-Homestead National Monument	100 Mbps	H.264			2011	Southeast CC
Beatrice-Southeast Community College	100 Mbps	H.264			2011	Southeast CC
Bennington	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Blair	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Bruning-Bruning/Davenport H.S.	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Chester-Thayer Central M.S.	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Cook-Nemaha Valley	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Crete	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Davenport-Bruning/Davenport M.S.	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Dawson-Dawson/Verdon	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Daykin-Meridian	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
DeWitt-TriCounty	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Deshler	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Dorchester	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Elkhorn	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Exeter-Exeter/Milligan H.S.	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Fairbury	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Fairmont-Fillmore Central M.S.	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Falls City	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Firth-Norris	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Friend	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Geneva-Fillmore Central H.S.	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Gretna	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Hebron-Thayer Central H.S.	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Henderson-Heartland	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Humboldt-Humboldt/Table Rock/Steinauer	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Johnson-Johnson/Brock	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Lewiston	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC

Lincoln-NDE	100 Mbps	H.264			2011	
Lincoln-Southeast Community College	100 Mbps	H.264			2011	Southeast CC
Louisville	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Malcolm	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
McCool Junction	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Milford	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Milford-ESU 6	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Milford-Southeast Community College	100 Mbps	H.264			2011	Southeast CC
Murdock-Elmwood/Murdock	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Murray-Conestoga	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Nebraska City	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Nebraska City-Visually Impaired	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Odell-Diller/Odell Secondary	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Omaha-ESU 3	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Omaha-Henry Doorly Zoo	100 Mbps	H.264				Metro CC
Omaha-Millard North	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Omaha-Millard South	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Omaha-Millard West	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Omaha-Westside Dist. 66	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Palmyra	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Pawnee City	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Plattsmouth	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Seward	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Shickley	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Stella-SE Consolidated	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Sterling	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Syracuse-Syracuse/Dunbar/Avoca	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Tecumseh	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Utica-Centennial	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Valley-Waterloo/Valley	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Waterloo-Waterloo/Valley	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Waverly	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Weeping Water	100 Mbps	H.264	3	SE.NEDLC	2011	Southeast CC
Wilber-Clatonia	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Wymore-Southern H.S.	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
York	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
<i>Auburn (NO DL)</i>	1.5 Mbps		4			Southeast CC
<i>Bellevue East (NO DL)</i>	1.5 Mbps		3			Metro CC
<i>Bellevue West (NO DL)</i>	1.5 Mbps		3			Metro CC
<i>Fort Calhoun (NO DL)</i>	1.5 Mbps		3			Metro CC
<i>Omaha Benson (NO DL)</i>	3.0 Mbps		19			Metro CC
<i>Omaha Bryan (NO DL)</i>	3.0 Mbps		19			Metro CC
<i>Omaha Burke (NO DL)</i>	3.0 Mbps		19			Metro CC
<i>Omaha Central (NO DL)</i>	3.0 Mbps		19			Metro CC
<i>Omaha North (NO DL)</i>	3.0 Mbps		19			Metro CC
<i>Omaha Northwest (NO DL)</i>	3.0 Mbps		19			Metro CC
<i>Omaha South (NO DL)</i>	3.0 Mbps		19			Metro CC
<i>Papillion-LaVista (NO DL)</i>	100 Mbps		3	SE.NEDLC	2009	Metro CC
<i>Papillion-LaVista-South (NO DL)</i>	4.5 Mbps		3			Metro CC
<i>Ralston (NO DL)</i>	100 Mbps		3	SE.NEDLC	2009	Metro CC
<i>Springfield-South Darpy Dist. 46 (NO DL)</i>	1.5 Mbps		3			Metro CC
Arapahoe	45 Mbps	JPEG	11	SW.NEDLC	2006	Central CC
Arnold	45 Mbps	JPEG	10	SW.NEDLC	2006	Mid-Plains CC
Arthur-Arthur County H.S.	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Bartley-Southwest Public Schools	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Benkelman-Dundy County H.S.	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Brady	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Callaway	45 Mbps	JPEG	10	SW.NEDLC	2006	Mid-Plains CC

Cambridge	45 Mbps	JPEG	11	SW.NEDLC	2006	Central CC
Culbertson-Hitchcock Co Unified	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Curtis-Medicine Valley	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Curtis-NE College of Tech Ag	45 Mbps	JPEG				
Eustis-Eustis/Farnam	45 Mbps	JPEG	11	SW.NEDLC	2006	Mid-Plains CC
Grant	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Hayes Center	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Hershey	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Hyannis	45 Mbps	JPEG	16	SW.NEDLC	2006	Western CC
Imperial-Chase County H.S.	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Indianola-Southwest Public Schools	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Madrid-Wheatland	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Maxwell	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Maywood	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
McCook	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
McCook-MidPlainsCC	45 Mbps	JPEG				Mid-Plains CC
McCook-MidPlainsCC	45 Mbps	JPEG				Mid-Plains CC
Mullen	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
North Platte	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
North Platte-ESU 16	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
North Platte-MidPlains CC	45 Mbps	JPEG				Mid-Plains CC
North Platte-MidPlains CC	45 Mbps	JPEG				Mid-Plains CC
North Platte-UN West Central Research	45 Mbps	JPEG				
Ogallala	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Ogallala-ESU 16	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Oxford-Southern Valley	45 Mbps	JPEG	11	SW.NEDLC	2006	Central CC
Paxton-Consolidated	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Stapleton	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Sutherland	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Theford	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Trenton-ESU 15	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Trenton-Hitchcock Co. Unified	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Tryon-McPherson County H.S.	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Wallace	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Wauneta-Wauneta/Palisade	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Cedar Rapids	45 Mbps	JPEG	7	TVDEC-N	2009	Central CC
Elba	45 Mbps	JPEG	10	TVDEC-N	2009	Central CC
Clarks-High Plains Community M.S.	45 Mbps	JPEG	7	TVDEC-N	2009	Central CC
Columbus-ESU 7	45 Mbps	JPEG	7	TVDEC-N	2009	Central CC
Fullerton	45 Mbps	JPEG	7	TVDEC-N	2009	Central CC
Greeley-Greeley/Wolbach	45 Mbps	JPEG	10	TVDEC-N	2009	Central CC
Scotia-North Loup Scotia	45 Mbps	JPEG	10	TVDEC-N	2009	Central CC
Palmer	45 Mbps	JPEG	7	TVDEC-N	2009	Central CC
Spalding	45 Mbps	JPEG	10	TVDEC-N	2009	Central CC
St. Edward	45 Mbps	JPEG	7	TVDEC-N	2009	Central CC
Wolbach-Greeley/Wolbach	45 Mbps	JPEG	10	TVDEC-N	2009	Central CC
Alma	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Amherst	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Axtell	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Bertrand	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Cairo-Centura H.S.	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Cozad	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Elm Creek	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Elwood	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Franklin	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Gibbon	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Gothenburg	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Grand Island (NO DL)	1.5 Mbps		10			Central CC

Appendix 3

336 Sites affected by network upgrade

December 10, 2004

Grand Island-Central Community College	100 Mbps	H.264					Central CC
Hildreth-Wilcox/Hildreth	100 Mbps	H.264	11	TVDEC-S	2009		Central CC
Holdrege	100 Mbps	H.264	11	TVDEC-S	2009		Central CC
Holdrege-ESU 11	100 Mbps	H.264	11	TVDEC-S	2009		Central CC
Kearney	100 Mbps	H.264	10	TVDEC-S	2009		Central CC
Kearney-ESU 10	100 Mbps	H.264	10	TVDEC-S	2009		Central CC
Kearney-UN-Kearney	100 Mbps	H.264					
Lexington	100 Mbps	H.264	10	TVDEC-S	2009		Central CC
Litchfield	100 Mbps	H.264	10	TVDEC-S	2009		Central CC
Loomis	100 Mbps	H.264	11	TVDEC-S	2009		Central CC
Minden	100 Mbps	H.264	11	TVDEC-S	2009		Central CC
Ord	100 Mbps	H.264	10	TVDEC-S	2009		Central CC
Overton	100 Mbps	H.264	10	TVDEC-S	2009		Central CC
Pleasanton	100 Mbps	H.264	10	TVDEC-S	2009		Central CC
Ravenna	100 Mbps	H.264	10	TVDEC-S	2009		Central CC
Shelton	100 Mbps	H.264	10	TVDEC-S	2009		Central CC
St. Paul	100 Mbps	H.264	10	TVDEC-S	2009		Central CC
Sumner-Sumner/Eddyville/Miller H.S.	100 Mbps	H.264	10	TVDEC-S	2009		Central CC
Wilcox-Wilcox/Hildreth	100 Mbps	H.264	11	TVDEC-S	2009		Central CC
<i>Grand Island NW (NO DL)</i>	1.5 Mbps		10				Central CC
<i>Wood River (NO DL)</i>	1.5 Mbps		10				Central CC
Alliance	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Bayard	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Bridgeport	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Chadron	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Chadron-Chadron State College	45 Mbps	JPEG					Western CC
Chappell-Creek Valley	45 Mbps	JPEG	14	WNDLC	2009		Western CC
Crawford	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Dalton-Leyton H.S.	45 Mbps	JPEG	14	WNDLC	2009		Western CC
Gering	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Gordon	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Harrisburg-Banner County H.S.	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Harrison-Sioux County H.S.	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Hay Springs	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Hemingford	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Kimball	45 Mbps	JPEG	14	WNDLC	2009		Western CC
Lodgepole-Creek Valley	45 Mbps	JPEG	14	WNDLC	2009		Western CC
Minatare	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Mitchell	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Morrill	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Oshkosh-Garden County H.S.	45 Mbps	JPEG	14	WNDLC	2009		Western CC
Potter-Potter/Dix H.S.	45 Mbps	JPEG	14	WNDLC	2009		Western CC
Rushville	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Scottsbluff	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Scottsbluff-ESU 13	45 Mbps	JPEG	13	WNDLC	2009		Western CC
Scottsbluff-Western NE Community College	45 Mbps	JPEG					Western CC
Sidney-ESU 14	45 Mbps	JPEG	14	WNDLC	2009		Western CC
<i>Sidney (NO DL)</i>	1.5 Mbps		14				Western CC
<i>Big Springs-South Platte H.S. (NO DL)</i>	1.5 Mbps		14				Western CC

Summary Data

Number of H.S. with 45 Mbps JPEG	152	
Number of H.S. with 45 Mbps MPEG2	20	
Number of H.S. with 100 Mbps	97	
Number of H.S. with 1.5-3.0 Mbps	23	
Number of ESUs with 45 Mbps JPEG	11	
Number of ESUs with 45 Mbps MPEG2	1	
Number of ESUs with 100 or 1000 Mbps	6	
Number of Higher Ed/Informal Ed Sites	26	(17 JPEG, 1 MPEG2, 8 H.264)
	336	

Consortium	Acronym	Contact	E-mail
Central Nebraska Distance Education Consortium	CNDEC	Chris Petroff	cpetroff@esu9.org
Crossroads Distance Education Consortium	Crossroads	Beth Kabes	bkabes@esu7.org
Eastern Nebraska Distance Learning Consortium	ENDLC	Diane Wolfe	dmwolfe@mail.esu2.org
Lincoln Distance Learning Consortium	LDLC	Kirk Langer	klanger@lps.org
Niobrara Valley TelePartnership	NVTP	Nigel Buss	nbuss@esu8.org
North Central Distance Learning Consortium	NCDLC	Nigel Buss	nbuss@esu8.org
Northeast Nebraska Distance Learning Consortium	NE.NEDLC	Nigel Buss	nbuss@esu8.org
Northeast Nebraska Learners Academy	NE. NELA	Nigel Buss	nbuss@esu8.org
Sandhills Technology Education Partnership	STEP	Rich Schlesselman	rschless@esu10.org
Southeast Nebraska Distance Learning Consortium	SE.NEDLC	Charles Doyle	cdoyle@esu5.org
Southwest Nebraska Distance Learning Consortium	SW.NEDLC	Shirley Schall	sschall@esu15.org
TriValleyDistance Education Consortium-N&S	TVDEC	John Stritt	jstritt@esu10.org
Western Nebraska Distance Learning Consortium	WNDLC	B.J. Peters	bpeters@esu13.org

Nebraska Information Technology Commission

--Technical Panel Charter--

(Last Revised: June 7, 2004)

1. Introduction

The Technical Panel was created by LB 924 in 1998 as an advisory body to the Nebraska Information Technology Commission (hereafter referred to as "Commission").

2. Purpose

The purpose of this charter is to provide operational guidance to the Technical Panel members, clarify its relationship to the Commission, and to provide general information to all who read the proceedings and recommendations of the Technical Panel.

3. Authority

The Technical Panel of the Nebraska Information Technology Commission is codified at Neb. Rev. Stat. § 86-521. Section 86-521(2) provides:

The technical panel shall review any technology project or request for additional funding recommended to the Nebraska Information Technology Commission including any recommendations by working groups established under sections 86-512 to 86-524. Upon the conclusion of the review of a technology project or request for additional funding, the technical panel shall provide its analysis to the commission. The technical panel may recommend technical standards and guidelines to be considered for adoption by the commission.

4. Commission Mission and Responsibilities (NEB. REV. STAT. § 86-516)

4.1 Commission Mission

"The mission of the Nebraska Information Technology Commission is to make the State of Nebraska's investment in information technology infrastructure more accessible and responsive to the needs of its citizens regardless of location while making government, education, health care and other services more efficient and cost effective." <http://www.nitc.state.ne.us/>

4.2 Commission Responsibilities:

4.2.1 Adopt policies and procedures used to develop, review, and annually update

a statewide technology plan;

4.2.2 Create a technology information clearinghouse to identify and share best practices and new developments, as well as identify existing problems and deficiencies;

4.2.3 Review and adopt policies to provide incentives for investments in information technology infrastructure services;

4.2.4 Determine a broad strategy and objectives for developing and sustaining information technology development in Nebraska, including long-range funding strategies, research and development investment, support and maintenance requirements, and system usage and assessment guidelines;

4.2.5 Adopt guidelines regarding project planning and management, information sharing, and administrative and technical review procedures involving state owned or state supported technology and infrastructure. Governmental entities, state agencies, and political subdivisions shall submit projects that directly utilize state appropriated funds for information technology purposes to the process established by NEB. REV. STAT. §§ 86-512 to 86-524. Governmental entities and political subdivisions may submit other projects involving information technology to the Commission for comment, review, and recommendations;

4.2.6 Adopt minimum technical standards, guidelines, and architectures upon recommendation by the technical panel;

4.2.7 Establish ad hoc technical advisory groups to study and make recommendations on specific topics, including work groups to establish, coordinate, and prioritize needs for education, local communities, and state agencies;

4.2.8 Make recommendations on technology investments to the Governor and the Legislature, including a prioritized list of projects, reviewed by the technical panel, for which new or additional funding is requested;

4.2.9 Approve grants from the Community Technology Fund and Government Technology Collaboration Fund; and

4.2.10 Adopt schedules and procedures for reporting needs, priorities, and recommended projects.

5. Technical Panel Mission and Responsibilities

5.1 Technical Panel Mission

The mission of the Technical Panel is to assist in the development of a statewide technical infrastructure that will be scalable, reliable, and efficient.

5.2 Technical Panel Responsibilities

5.2.1 Assist the Commission in developing, reviewing, and updating the statewide technology plan;

5.2.2 Review any technology project or request for additional funding recommended to the Commission including any recommendations by working groups established by the Commission;

5.2.3 Recommend technical standards and guidelines to be considered for adoption by the Commission;

5.2.4 Review requests for funding from the Community Technology Fund, the Government Technology Collaboration Fund, and other requests for funding for technology projects as directed by the Commission; and

5.2.5 Such other responsibilities as directed by the Commission.

6. Membership

6.1 Number of Members

The Technical Panel may include but not be limited to seven members approved by the Commission.

6.2 Representation

6.2.1 One representative from the Nebraska Educational Telecommunications Commission;

6.2.2 One representative from the Department of Administrative Services;

6.2.3 One representative from the University of Nebraska Computing Services Network;

6.2.4 State of Nebraska Chief Information Officer;

6.2.5 Executive Director of the Commission;

6.2.6 One member with expertise in assistive technology;

6.2.7 One member representing K-12 education; and

6.2.8 Other members as specified by the Commission.

6.3 Change in Membership

If a change in membership becomes necessary due to resignation, removal, or change of job status, the agency represented is responsible for nominating or recommending the replacement member to the Technical Panel.

7. Meeting Procedures

7.1 Chair(s)

7.1.1 A Chair, elected by the members, will conduct the meetings of the Technical Panel, oversee the establishment, operation and dissolution of committees, propose meeting agendas, and maintain the general operations of the Panel.

7.1.2 The Chair of the Technical Panel will serve until January 1, 2001; with subsequent one-year elected terms expiring on January 1 of each year.

7.2 Quorum and Action Items

An official quorum consists of at least 50% of the members or their alternates. No official voting business may be conducted without an official quorum. Issues shall be decided by a majority vote of the members present.

7.3 Designated Alternates and Non-voting Alternates

Each member of the Technical Panel shall designate one (1) official alternate to be approved by the Commission. This official voting alternate shall be registered with the Office of the Chief Information Officer and NITC and, in the absence of the official member, have all the privileges as the official member on items of discussion and voting.

7.4 Meeting Frequency

The Technical Panel shall meet not fewer than four times per year (quarterly).

7.5 Open Meeting Laws and Public Notice

7.5.1 Advance Notice

The Technical Panel shall give reasonable advance publicized notice of the time, place, and agenda of each meeting through the use of its web page, <http://www.nitc.state.ne.us/>. The agenda will also be available for public inspection during normal business hours at the Office of the CIO-NITC, 521 S. 14th, Suite 301, Lincoln, Nebraska.

7.5.2 Minutes and Voting

The Technical Panel shall keep minutes of all meetings showing the time, place, members present and absent and the substance of all matters discussed. Any action taken on any question or motion duly moved and

seconded shall be by roll call vote of the Technical Panel in open session, and the record shall state how each member voted or if the member was absent or not voting. The roll call shall be called on a rotational basis. Minutes shall be written and available for inspection within ten working days or prior to the next convened meeting, whichever occurs earlier.

Approved by the NITC on August 30, 1999. Amendments approved by the NITC on April 30, 2002.
Statutory references revised June 7, 2004.